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The influence of collaboration on attitudes towards English vocabulary learning

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ABSTRACT

While many studies in second language learning have concentrated on developing effective vocabulary instruction methodologies, little research has focused on the specific ways instructors can encourage positive learner attitudes towards the vocabulary learning process. Integrating varied learning styles into vocabulary learning activities may be one way for second language educators to help cultivate positive attitudes towards study of English vocabulary, as well as promote vocabulary acquisition.

This experimental study investigates how participation in collaborative vocabulary learning environments impacts ESL students' attitudes towards and motivation in English vocabulary learning, and their understanding of and ability to use the target vocabulary appropriately in context. Two treatment groups comprised of 24 advanced level ESL students completed an online, vocabulary learning task either individually or collaboratively. Pre-task and post-task surveys were given to participants to gauge each treatment groups' change in attitudes towards and motivation in vocabulary learning, as well as gauge their growth in vocabulary knowledge.

The study's findings reveal that no significant growth occurred in either treatment groups regarding learner attitudes towards or motivation in studying English vocabulary, but that the collaborative treatment group reported a significantly higher increase in vocabulary knowledge over the individual treatment group. Further research on the effect of various vocabulary learning styles on learner attitudes and motivation in English vocabulary learning and vocabulary development are needed.

CHAPTER 1: INTRODUCTION

Beyond a student's ability to recognize, understand and retain vocabulary in her target language, a number of both obvious and subtle factors must be present to create the conditions for fruitful language learning. Motivation, encouragement and enthusiasm on the student's (and teacher's) part can serve to generate a language-learning environment where the student establishes not only a deeper understanding of form, meaning and use of the designated vocabulary, but also forms a positive, lasting connection to the second language learning process. In successful language learning situations, consideration of the language learning process, including methodological approach, learning environment, engagement strategies and utilized pedagogical tools, is equally pertinent as ensuring vocabulary acquisition, the product, is achieved.

This thesis explores the role of collaboration in influencing learners' attitudes towards ESL vocabulary instruction. Specifically, this thesis comprises an experimental study of two treatment groups of learners who engaged in the completion of an online etymology-based, LanguageQuest with a partner or alone. The research seeks to determine what effect individual versus collaborative study of the vocabulary items through a task-based activity has on learners' attitudes towards English language vocabulary learning and, consequentially, their motivation to study English vocabulary.

Statement of the Problem

The benefits of collaborative learning for students are touted by an array of researchers and instructors in second language learning and a range of other disciplines. Unlike the individual learning model, which involves students' solitary work in or study of the target language (TL), the collaborative learning model involves the placement of students

in pairs or small groups to collaborate to achieve a common linguistic goal in the TL. Collaborative learning has been shown to encourage the growth of student interdependence (Bruffee, 1999), responsibility (Totten, Sills, Digby, & Russ, 1991), interpersonal skills (Rymes, 1997), and cognitive and critical thinking skills (Johnson & Johnson, 1986). In second language learning, collaborative learning models are applicable in the instruction of students of varying ages (from children to adults) studying in a variety of educational environments (primary, secondary, higher education), in second or foreign language settings, of a range of proficiency levels (from inexperienced beginners to highly advanced learners) and in conjunction with other pedagogical approaches and methodologies. Because collaborative learning has been evidenced to positively impact learner attitudes and enthusiasm towards their target language (Kohonen, 1992), the implications for collaboration in vocabulary instruction have tremendous potential to foster motivation and enthusiasm for current and future study of the target language.

While collaborative learning models have been utilized and studied in language learning classrooms, little research has focused on the effects of the convergence of second language vocabulary learning and the collaborative model. Second language learning professionals and instructors grossly overlook the abundance of possibilities in collaborative learning by noting the effectiveness of the learning style, but disregarding its potential in vocabulary learning.

To better understand how effectively the collaborative learning model fits into second language vocabulary instruction, it is necessary to inspect two crucial components in the learning process: learner attitudes and acquisition. While a principal goal of second language reading, writing, listening and speaking class curricula is to promote extension of learners'

TL lexicon, it is just as important to study how the learning environment and strategies utilized greatly affect learner attitudes towards, and motivation in studying the content. Hands-on engagement with the content in the target language in a collaborative learning environment may promote not only the growth of students' communicative competence, but it may also foster the establishment of profound connections to and increased inspiration in learning the TL.

Objective and Scope of the Study

The overarching objective of this thesis is to examine the impact of collaborative learning and individual learning on English language learners' attitudes towards, and motivation in learning their target language. The information gained through this study will advance knowledge about the potential for collaborative learning in second language vocabulary instruction, an area thus far lacking in empirical research in the field of applied linguistics. It is hoped that this study will spur future investigations on the impact of collaboration in second language vocabulary learning.

To best examine ways in which second language instructors can effectively enhance vocabulary development in their learners, while developing positive attitudes towards English language vocabulary learning and motivation to further study the TL, this research project includes an experimental study using two treatment groups, each of which undergo an instructor-directed completion of a computer-based, vocabulary activity using a particular learning model. In one treatment group the collaborative learning model is employed and in the other treatment group, the individual learning model is employed. Participants in both treatment groups completed the same vocabulary activity, though in one group learners completed the task in pairs and in the other group learners completed the task independently.

Learners' responses to quantitative and qualitative questions in pre-task and post-task surveys comprise the data which reflect their attitudes and motivation in second language vocabulary learning, as well as demonstrate their familiarity with the target vocabulary items.

Research Questions

The research questions generated to fit the study have been designed to be intentionally broad; in this way, the questions provide direction for the design of study procedures, data collection and data analysis, but do not restrict the interpretation of open-ended qualitative responses in the discussion of data results. The research questions guiding the study are as follows:

> RQ1: *What is the impact of participation in an individual learning environment or a collaborative learning environment on learners' attitudes towards and motivation in learning English vocabulary?*
>
> RQ2: *How is learners' vocabulary knowledge of the selected items influenced by their participation in an individual learning environment or a collaborative learning environment?*

The first research question examines the influence of the experienced learning model on learners' reported attitudes in and motivation towards studying target language vocabulary. Using two treatment groups allows for an investigation of the influence of each of the divergent learning models on learners' attitudes and motivation, leaving room for comparison and contrast of the potentially varied results.

The second research question examines the impact of participation in collaborative learning environments and individual learning environments on the participants' understanding of and ability to use the designated target language vocabulary items in appropriate contexts. The phrasing of RQ2 intentionally centers on changes in learners' "vocabulary knowledge" and not "vocabulary acquisition," as the measurement tool utilized

to assess participants' familiarity with each vocabulary item --the *Vocabualry Knowledge Scale* (Wesche & Paribahkt, 1996) -- evaluates not the acquisition which has taken place, but rather enables a testing of distinct stages of recognition. Further explanation of the measurement tool chosen for this study is found in chapter 2.

Data were elicited via surveys administered before and after task completion. Quantitative and qualitative data collection techniques were used to mark reported changes in participants' attitudes towards and motivation in learning English language vocabulary and vocabulary knowledge. Detailed descriptions of data collection, analysis and interpretation are given in chapter 3's analysis section.

Structure of the Study

This study is organized into four subsequent chapters containing a review of relevant literature on the topics covered in this thesis (chapter 2), a detailed account of selected methodology for the research (chapter 3), the quantitative and qualitative data results in response to RQ1 and RQ2 (chapter 4) and the implications and limitations of this research, plus recommendations for future research on the topic of collaborative learning environments in second language vocabulary instruction (chapter 5).

CHAPTER 2: LITERATURE REVIEW

This chapter presents a theoretical framework on which my current study is based and provides an overview of the relevant literature and research concerning effective pedagogical models in vocabulary instruction. The review first addresses the importance of vocabulary in second language acquisition, then examines how to define vocabulary knowledge, covers varied approaches to vocabulary assessment, describes the dominant models in second language vocabulary instruction (with a specific section dedicated to the collaborative learning model), moves to an exploration of the factors that influence students' attitudes and motivation in vocabulary learning, and concludes with the potential effects of collaboration on learner attitudes and motivation in the second language learning classroom. Particular emphasis is placed on the techniques used in this study: the collaborative learning model, learner attitudes and motivation, *the vocabulary knowledge scale* (Wesche and Paribakht, 1996).

The Role of Vocabulary in Second Language Acquisition

Until quite recently, vocabulary, "central to language and of critical importance to the typical language learner," has remained largely undervalued and overlooked by professionals and instructors in the field of applied linguistics (Zimmerman, 1997, p. 5). Second language vocabulary instruction has endured decades of being generally overlooked by language teachers and researchers who were "preoccupied with the development of grammatical competence" (Read, 2000, p. 1) and deemed syntax and morphology "more serious candidates for theorizing" (Richards, 1976, p. 77) as opposed to exploring ways to advance effective vocabulary learning strategies.

In recent years vocabulary learning has begun to receive increased attention in Second language acquisition (SLA) and started to take a place among priorities in the field. Researchers, practitioners and curriculum developers now acknowledge the need for strong theoretical foundations in vocabulary learning methodology and look forward to future research geared towards refined methods of measuring vocabulary knowledge and use (Read 2000).

The recent shift in attention to vocabulary acquisition has undoubtedly come as a result of the recognition of the significance of vocabulary (and vocabulary size) for native speakers (NSs) and non-native speakers (NNSs) alike. For native speakers, the most intense period of vocabulary growth occurs during childhood. As the individual enters adulthood, her vocabulary continues to grow as she encounters new ideas and social trends and opens herself to varied learning opportunities (Read, 2000). Although there are disagreements among researchers, it is generally agreed upon that the typical adult native speaker's vocabulary contains tens of thousands of words and, in extraordinary cases, may exceed 100,000 words (Sternberg, 1997).

The significance of the vocabulary size of a native speaker is immense. Sternberg (1997) says that a native speaker's vocabulary size "is highly predicative, if not determinative, of one's level of reading comprehension" (p. 90). Often, as a result of larger vocabulary and greater reading comprehension, the NS is then able to make accurate projections -- based on her familiarity with known words -- of additional unknown vocabulary she encounters, thus perpetuating the vocabulary expansion further (Sternberg, 1997). Sternberg also asserts that "vocabulary is probably the best single indicator of a

person's overall level of intelligence," and it is typically a reliable predictor of one's overall score on a psychometric IQ test (1997, p. 90).

But which, if any, of these proclamations about the importance of vocabulary in the lives of NSs can be transferred to a discussion of how researchers confront the topic of vocabulary learning with second language learners? Fundamental differences lie at the heart of how linguists view L1 and L2 vocabulary acquisition. Because the tasks NNSs engage in in their L2 diverge in objectives and process from those of NSs, second language vocabulary acquisition needs its own arena of investigation.

In their research on foreign language learners' vocabulary learning strategies, Lawson and Hogben (1996) analyze the needs of second language learners and the self-initiated strategies they use when learning new vocabulary. Like NSs, NNSs often encounter the majority of unknown vocabulary in text material, but unlike NSs, NNSs frequently feel the "need to learn and retain the meanings of some of these words for later use" (p. 103). An unknown vocabulary item may set off a series of purposeful actions by the NNS to determine word meaning: prediction of the word's meaning, checking a dictionary to compare with the prediction, rewriting a word or word's meaning in the text margins, and recording the word's meaning in a personal vocabulary list. Whatever the process, second language learners "make a decision to use deliberate procedures for remembering word meanings" when they encounter an unknown word, and they do so because the word is regarded as worthwhile (Lawson & Hogben, 1996, p. 103). As the researchers point out, the success of strategies chosen for vocabulary learning directly impacts the learner's subsequent recall of the word and word meaning (a topic discussed in the next section). Investigation of such strategies is

critical, lest we re-enter another period of relative disregard for second language vocabulary learning methods (Lawson & Hogben, 1996).

In light of how the connection between process and results of vocabulary learning are for second language learners the prolonged "neglect" of vocabulary acquisition in language learning remains "all the more striking in that learners themselves readily admit that they experience considerable difficulty with vocabulary" and, in more advanced stages of their second language acquisition, "most learners identify the acquisition of vocabulary as their greatest single source of problems" (Meara, 1980, p. 221). As instructors and researchers more readily accept and examine the role of vocabulary instruction in second language learning (Richards, 1980; Laufer, 1986; Nation & Coady, 1988, Nation, 1990), professionals must confront the issue of how to define vocabulary knowledge and what knowing a word entails to declare specific goals for vocabulary instruction and choose appropriate methods for assessing achievement of those goals.

Defining Vocabulary Knowledge: From receptive to active and beyond

A still important question within the field of Second Language Acquisition is: How do we define vocabulary knowledge? Most instructors and students would concede that "the potential knowledge that can be known about a word is rich and complex" (Schmitt, 2000, p. 5). For this and other reasons, generating an all-encompassing, harmonious definition of vocabulary knowledge is complex and arduous.

One of the most prominent early works on second language vocabulary learning, Jack Richards' essay "The Role of Vocabulary Teaching" (1976) presents a foundational framework to which, even decades later, professionals in the field continue to refer. Richards was of the first to propose that lexical competence consists of linguistic, psycholinguistic and

sociolinguistic dimensions which shape how a learner comes to know a word. In his paper, the author outlines eight assumptions about vocabulary knowledge based on theoretical background on vocabulary learning up to time of his composition including:

1. The native speaker language continues to expand his vocabulary in adulthood, whereas there is comparatively little development of syntax in adult life.

2. Knowing a word means knowing the degree of probability of encountering that word in speech or print. For many words, we also know the sort of words most likely to be found associated with the word.

3. Knowing a word implies knowing the limitations imposed on the use of the word according to variations of function and situation.

4. Knowing a word means knowing the syntactic behavior associated with that word.

5. Knowing a word entails knowledge of the underlying form of word and the derivatives that can be made from it.

6. Knowing a word entails knowledge of network of associations between that word and the other words in language.

7. Knowing a word means knowing the semantic values of the word.

8. Knowing a word means knowing many of the different meanings associated with the word. (Richards, 1976, p. 83).

While these assumptions have received criticism from a range of SLA scholars, Meara (1996) reminds us that Richards' intent was not to attempt to resolve the matter of what it means to know a word, but rather "to give an account of contemporary linguistic research with inferences and applications to teaching" (p. 2). The result objective of Richards (1976) has less to do with defining vocabulary knowledge and is more principally concerned with how his eight assumptions may serve as "a frame of reference for assessing vocabulary teaching" of the time (Richards, 1976, p. 77). In other words, Richards explores how

contemporary pedagogical practices in vocabulary teaching of the mid-1970's were supported by assumptions about vocabulary knowledge as opposed to being grounded in empirical research.

Since Richards (1976) numerous models have emerged in an attempt to represent a more complete account of vocabulary knowledge and how it is that learners acquire this knowledge. One commonly held perspective amongst linguists in the discipline is that vocabulary acquisition takes place along a continuum of development, wherein a learner progresses from less knowledge to more knowledge of a word. Within this continuum of vocabulary development, numerous researchers (Pigott, 1981; Palmberb, 1987; Melka, 1997) acknowledge that the transition from receptive recognition to active use of a word exists simultaneously alongside an increase in word knowledge (see Figure 2.1). Faerch, Haastrup and Phillipson (1984) assert "we should think of vocabulary knowledge as a continuum

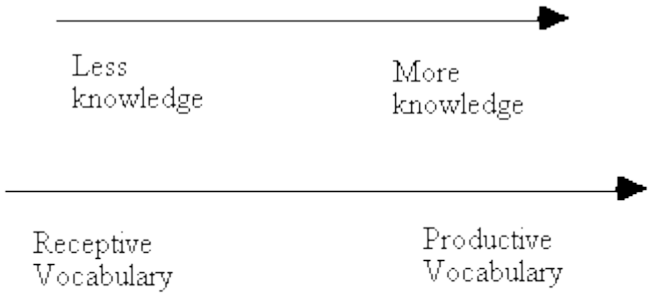


Figure 2.1: Continua of Vocabulary Knowledge (Waring, 2002, p.1)

between the ability to make sense of a word and the ability to activate the word automatically for productive purposes" (p. 100). Because receptive knowledge of a word is a necessary antecedent of the productive knowledge of the word, educators typically first focus on students' understanding of the term before moving on to use of the term in context. Because automaticity of production occurs only after much practice and familiarity with a word, a

large majority of vocabulary-building curricula centers on getting the learner to produce the vocabulary items repeatedly in addition to having the learner simply understand the meaning.

Researchers since Faerch, Haastrup and Phillipson (1984) have elaborated on the less-to-more, receptive-to-productive knowledge continua model. Henriksen (1996) addresses learners' "depth of comprehension" of the target vocabulary in his model of vocabulary acquisition (see Figure 2.2). Henriksen modifies the dual continua model to include a third continuum. The third continuum illustrates a learner's comprehension of

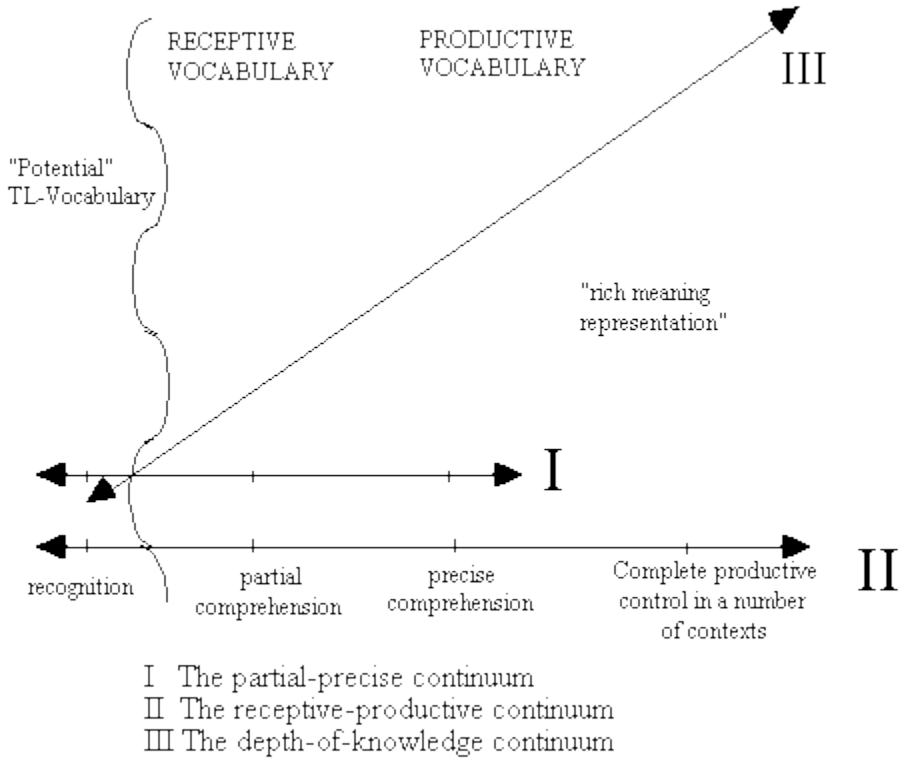


Figure 2.2: A Model of Vocabulary Acquisition (Henriksen, 1996)

the word's referential meaning, including knowledge of similar, opposite and unrelated words and knowledge of the word's relationship to other units in a grammatical construction. Henriksen also redefines the continuum of "less-to-more knowledge" as "partial-to-precise comprehension," reasoning a learner navigates her way to more precise, accurate and

comprehensive understanding of a word (refining the "less" vs. "more" knowledge polarization) as she learns to produce it correctly in appropriate contexts (1996).

The models presented in this section comprise only a sampling of the many existent frameworks on vocabulary knowledge acquisition. Though researchers today continue to create innovative versions of paradigms representing vocabulary knowledge or vocabulary acquisition, measuring what a learner knows is also a principal concern to second language learning professionals and instructors teaching vocabulary.

Issues in the Assessment of Vocabulary Knowledge

Proper assessment of language knowledge is essential for students, teachers, language learning programs, second language test developers and researchers in applied linguistics. Whether it is a high-stakes or a low-stakes assessment, appropriate measurements of learners' knowledge of their second language are absolutely critical. Learners' scores on placement tests, quizzes and exams bear great weight in the decisions they make about their present and future lives, and also impact the educational, professional and/or social opportunities learners have access to. Test developers seek the most effective ways to appropriately report scores to test users and test takers, estimate the reliability and consistency of the scores across varying situations of use and examine the validity of the inferences made from the scores, and continually analyze the construct being tested in order to "improve the quality of individual test tasks, or items" (Bachman & Palmer, 1996, p.92).

As Read (2000) asserts: "at first glance, it may seem that assessing the vocabulary knowledge of second language learners is both necessary and reasonably straightforward" (p.1). Yet, beyond the first glance the matter of vocabulary assessment is quite multifaceted and warrants persistent consideration from second language instructors and researchers.

Much progress has been made in empirical research on vocabulary assessment. Read (2000) strives to showcase researchers efforts and in doing so, brings gravity and credence to the issue of vocabulary learning as a whole. After establishing a generally accepted basis of what constitutes vocabulary knowledge and use as shown through the empirical research of test developers and language learning instructors, Read delves into how these constructs can be measured and the implications for such assessments (2000). What Read uncovers in his investigation of vocabulary assessment tools is that, while learners may perceive vocabulary-based tests as appealing in their apparent capacity to depict language competence as a neat and conclusive numerical value (i.e., a student knows 5,045 English words), second language learning researchers, instructors and test-designers still struggle to create objective assessments that measure linguistic competence in more holistic ways (2000). Because vocabulary knowledge is only one component of language proficiency, as Read argues, a learner's linguistic competence in her L2 involves additional factors regarding not only her knowledge of the word, but also ability to use the word appropriately in context (2000).

There remains much debate amongst linguists concerning what it means for a learner to be competent in her L2. Chomsky (1965) holds that linguistic competence entails a learner's knowledge of a word's grammatical rules, thus providing her endless possibilities for production and comprehension in a variety of syntactic operations. In response to Chomsky's strictly grammatical notion of linguistic competence, Hymes (1966) introduces the concept that social knowledge, in addition to grammatical knowledge, is a necessary component of what he terms learners' "communicative competence," later known as "the socially appropriate use of language" (Paulston, 1992, p. xiv). Bachman and Palmer (1996) further build on these conceptions of linguistic competence to establish that "strategic

competence," including organizational, pragmatic and sociolinguistic knowledge, make up obligatory aspects of learners' linguistic competence. With so many features of learners' linguistic competence to take into account, it is no wonder that difficulties surface when applied linguists and second language teachers design and evaluate assessments of learners' vocabulary knowledge.

Constructing fair and accurate assessments of learners' vocabulary knowledge is another compulsory consideration for second language learning teachers and professionals. Read (2000) notes that a major contradiction in current second language teaching strategies is that instructors' pedagogies emphasize communicative effectiveness, concentrating on the functions and contexts of a word's use, while their vocabulary tests, in attempts to maintain directness and objectivity, are constructed to treat words discretely and elicit primarily receptive responses from students (2000). The mismatch of emphasizing communicative effectiveness through performance in the classroom, but measuring "vocabulary knowledge as a distinct construct, separated from other components of language competence" raises serious questions about test validity and authenticity and has received increased attention of much vocabulary assessment research within the past decade (p. 8).

Goldstein and Laufer (2005) say that the vocabulary tests that are based on particular knowledge components "measure just one of the subknowledges," but misleadingly "claim to represent the learner's total vocabulary" (p. 400). Examples of subknowledge tests are those assessing comprehension of meaning (Meara & Buxton, 1987; Nation, 1983), production of meaning (Laufer & Nation, 1999), vocabulary use (Arnaud, 1992; Laufer & Nation, 1995), and word associations (Read, 1993). The problem with the assessments that result from testing a particular subknowledge is that only one component of the word knowledge is

assessed; such tests are an inaccurate reflection of learners' knowledge of the word and, consequently, their ability to understand and use the word in situationally appropriate contexts.

Another way to examine the construct of word knowledge derives from a return to representations of vocabulary acquisition portrayed as several simultaneously-existing continua existing congruently (highlighted in the previous section on defining vocabulary knowledge), where the learner's subknowledge as well as information regarding her vocabulary development are elicited. Some researchers (Wesche & Paribakht, 1996; Schmitt, 1998) have utilized continua models of vocabulary acquisition to create vocabulary measurement tools which gauge learners' knowledge as it occurs along a single continuum, or multiple continua, ranging from passive/receptive states to active/productive states.

The measurement tool chosen to assess learners' vocabulary knowledge development in this study is Wesche and Paribakt's (1996) *vocabulary knowledge scale* (VKS). In the VKS learners are asked to give a self-report concerning their knowledge of individual lexical items by marking one of five progressive stages of vocabulary knowledge they experience with each word. The VKS (as seen in Figure 2.3) progresses from stages on to five, with the first two two stages requiring only that the learner circle the number of the stage with which

1. I don't remember having seen this word before
2. I have seen this word before but I don't know what it means
3. I have seen this word before and I think it means....
4. I know this word. It means...
5. I can use this word in a sentence e.g....

Figure 2.3: The Vocabulary Knowledge Scale (VKS), (Wesche & Paribakht, 1996).

she identifies as representative of her knowledge of the particular word. Stages three to five ask the learner to not only mark her familiarity with a word, but also provide a synonym and/or example sentence that demonstrates her ability to use the word appropriately in context. Completion of the VKS, therefore, requires students to self-assess their own vocabulary knowledge and, in some case, produce evidence of their knowledge so evaluators may determine the accuracy of the students' claims (Wesche & Paribakht, 1996).

Despite Wesche and Paribakht's attempts to measure vocabulary knowledge in addition to vocabulary development, the VKS has received extensive criticism from skeptics. Meara (1996) argues that the VKS consists not of five, but of just four stages of knowledge, as the first stage suggests the learner has no knowledge of the word whatsoever. Meara goes on to state that the fixed-progression scale is overly simplistic, ignoring the deeper semantic and sociolinguistic knowledge crucial in determining the learner's linguistic competence with the vocabulary item.

However, the criticism of Wesche and Paribakht's vocabulary knowledge scale (1996) has not prevented the use of the VKS in studies to test vocabulary acquisition or development (see Segler, Pain & Sorace, 2002; Nassaji, 2004). It appears Wesche and Paribakht, too, are aware of the scale's shortcomings, contending the VKS was designed

> "to capture the initial stages or levels in word learning which are subject to self-report or efficient demonstration, and which are precise enough to reflect gains during a relatively brief instructional period... An extension of the scale might presumably be used to explore (more detailed) aspects of knowledge, but if this were done with significant numbers of words, it would greatly reduce its administrative feasibility" (Wesche & Paribakht, 1996, p. 27, as cited in Meara, 1996, p. 6).

In recent years, some researchers (Meara, 1996; Laufer & Nation, 2001) have proposed adding another dimension to vocabulary assessments which addresses the fluency or speed with which a learner can perform a task related to the target vocabulary by evaluating a learner's automatic recall and production with long lists of words. Others (Read & Chapelle, 2001) have advised approaching vocabulary testing from an interactionalist perspective, which incorporates an assessment of learners' communicative skills as well as their discrete knowledge of the word.

The variance and continual advancement in assessment tools only shows that applied linguists are still searching for the most appropriate means to measure second language learner vocabulary. More sophisticated methods in the assessment of vocabulary knowledge and use are still needed.

Dominant Learning Models in Second Language Vocabulary Instruction

While reliable, valid and accurate assessments are most certainly crucial in examinations of second language vocabulary acquisition, the learning models, methodologies and techniques second language instructors use comprise other germane factors of learners' successful, quality learning. The effectiveness of the vocabulary instruction, including the extent to which the instructor can equip the learners with strategies on how to approach and cope with unknown vocabulary items, depends in part on the pedagogical approach and learning model, or models, chosen and implemented by the teacher.

This section provides an overview of some common models used in second language vocabulary instruction. First, the overview touches briefly on a few of the prominent foundational models in vocabulary instruction, then transitions into a review of a selection of dominant present-day models, accompanied by succinct summaries of the models'

derivations, contributions and potential drawbacks. Many of these models can be implemented simultaneously in the second language learning classroom, and some even show overlap in their points of concentration, classroom structures or learning techniques, but each offers a unique emphasis in how it approaches effective vocabulary instruction.

Foundational Vocabulary Instruction Models

Second language vocabulary instruction has undeniably come a long way with regards to pedagogical approaches, classroom methodologies and utilization of language learning resources. Zimmerman (1997) follows the course of pedagogical advancements in vocabulary instruction, highlighting a few particularly influential models that served as the underpinning for future expansion, including the Grammar-Translation Method, the Direct Method, the Audio-Lingual Approach, Communicative Language Teaching and the Natural Approach.

Instructors using the Grammar Translation Method, popular in the 1700's and 1800's throughout Europe, required learners to memorize grammatical rules of the target language and supplied learners with numerous bilingual lists of vocabulary, so the students may read and translate texts from classical Greek and Latin literature (Zimmerman, 1997, p. 7).

The Direct Method, emerging at the end of the 19th century, moved beyond translations from the L1 to the L2 and took a more interactive approach to language learning. Classes using the Direct Method are taught in the L2, are relatively small and intense, and involve a series of question/answer interactions. Though vocabulary teaching using the direct method aims to include lexical items that are relevant to the students and helps students acquire words through use of visuals and tactile engagement, critics argue the

learning environment is impractical and the method entails overgeneralizations of communication similarities between learners' NL and their TL (Zimmerman, 1997).

Structural linguists, creators of the Audio-Lingual Method around the time of World War II, perceived the problems of second language learners to be resultant of the clashes between different language's grammatical structures. Vocabulary learning in the audio-lingual classroom consists of oral drilling of the target vocabulary, with an emphasis on acquisition as a process not unlike forming a habit. Some researchers view the audio-lingual approach as undervaluing vocabulary items for their communicative value in the approach's fixation on grammatical structures (Zimmerman, 1997).

Up to as late as the early 1970s, second language learning pedagogy placed little emphasis on explicit instruction of vocabulary; this changed with the work of Hymes (1972). Reacting to Chomsky's (1965) categorization of language as a mental grammar competence existing separately of performance, Hymes (1972) proposed the notion of a learner's *communicative competence*, which incorporates pragmatic and sociolinguistic aspects of language learning. This new focus on communication shattered previous conceptualizations that the learner's knowledge of structure is central to her linguistic competence and gave way to a new pedagogical approach called Communicative Language Teaching (CLT) which placed heightened emphasis on explicit vocabulary instruction.

CLT, the main goal of which is to teach the language so that students are able to communicate with others, regards vocabulary as an element of chief importance. Getting learners to a point where they feel they can effectively express themselves, be understood and comprehend others in their L2 requires extensive building of students' lexicon. CLT places prominence on fluency, as opposed to accuracy, and typically addresses vocabulary

instruction within contextualized activities, getting students to utilize language in situationally appropriate ways (Zimmerman, 1997). While CLT has received negative feedback from linguists who believe that the approach is considered successful when the teacher can understand the student (an obvious issue in foreign language learning settings), the model remains quite prevalent in most second language learning classrooms today (Zimmerman, 1997).

The Natural Approach views second language vocabulary acquisition as a process which is intended to occur naturally with prolonged exposed to the target language, and understanding vocabulary, a "bearer of meaning," is a vital part of the natural acquisition (Zimmerman, 1997, p. 15). Vocabulary instruction accentuates content that is relevant and interesting for the learner, and "students' attention is not on vocabulary learning per se, but on communication, on the goal of an activity" (Krashen & Terrell, 1983, p. 156, as cited in Zimmerman, 1997, p. 15). The approach continues to receive criticism on its advocating a silent period--wherein the learner observes until she is prepared to produce the language orally--as the period is indeterminate and a learner could potentially never progress through this phase (Zimmerman, 1997).

These approaches compose just a fragment of the current prevailing models in second language vocabulary instruction, but have been summarized so as to provide a basis on which discussion of further models will be built. Many of the models, in one form or another, are still used today in second language learning classrooms. The review now switches the spotlight to lesser-known, modern methods and techniques used to teach vocabulary in a second language.

Keyword Method

The late 1970's and early 1980's gave way to a surge in research (Raugh, & Atkinson, 1974; Singer, 1977; Pressley, et al., 1980) on the use of mnemonic devices in the vocabulary instruction. Of these, the *keyword method,* which consists of two stages of linking already known knowledge to the TL vocabulary items, is one of the best known. In the first stage, learners draw connections between the target vocabulary item and a *keyword*, a word in the learners' L1 that is phonetically similar to the TL item (for example, the Slovak word *velky* sounds like the English word *elk,* with *elk* being the keyword*).* In the second stage, learners associate the keyword with the L1 translation of the TL vocabulary item by imagining a mental image which melds the two words (for example, *velky* in Slovak means "large," so using the keyword we could imagine a very large elk).

There is evidence to support the use of the keyword method in second language vocabulary instruction. In Raugh and Atkinson's (1974) study using a control group of learners who did not use the keyword method and an experimental group of learners who did, the researchers find that the method is useful especially when learners are coping with long lists of words (exceeding 60 TL vocabulary items). In their study, learners using the keyword method got 80% of the vocabulary items correct on tests and preserve the vocabulary item in long-term memory with more precision than students who use other methods (Raugh and Atkinson,1974).

Critics argue that the keyword method is flawed at many levels. Meara (1980) reasons that the method "treat[s] vocabulary items as discreet pairs of translation equivalents, and completely ignore[s] the complex patterns of meaning relationships that characterize a proper, fully formed lexicon" (p. 5). Thomas and Wang (1996) argue that in their

longitudinal tests of keyword method learners versus learners using rote memorization techniques, long-term retention of vocabulary was actually greater for learners utilizing rote memorization as opposed to the keyword method. Variations of the keyword method are still used today, but they are less likely to be utilized in contexts where learners' target language and native language are phonetically divergent.

Depth of Processing Model

Elaboration on the keyword model came with suggestions from researchers (Craik & Tulving, 1975; Pressley, Levin & Delaney, 1982) that TL vocabulary items should be expanded to include interaction with learners' sensory level processing. The *depth of processing model* is built on the keyword method's notions of supplying the learners with associated imagery of a word to incorporate acoustic connections and elucidation at the semantic level. Depth of processing model advocates hold that in broadening learners' sensory-based associations with vocabulary items, intensified cognitive processing occurs, thereby establishing more substantial (and more long-term) connections with the TL vocabulary items.

Craik and Tulving (1975) did a series of tests on the depths of processing model where learners encoded various vocabulary items at different levels (shallow, moderate and deep), then were given a surprise recognition test of the items at the end of the encoding. Findings from the experiments show that learners remember a word better when it has been encoded at a deeper level of processing. This indicates that heightened sensory engagements with lexical items promote increased meaningful relationships between the learner's mind and the word and, therein, greater vocabulary acquisition.

After conducting similar studies testing the depths of processing model, critics (Morris, et al., 1977) suggested recall of a vocabulary item depends on factors other than the depth of processing, namely *transfer-appropriate processing* (concerning the extent of phonemic processing of a word). Another major criticism of the model concerns the very definition of "depth." Psychologists have raised questions regarding how circular Craik and Tulving's (1975) notion of "depth" is, as the researchers suggest that items remembered are deeply processed and what is deeply processed leads to enhanced memory. Application of the model in vocabulary instruction is in effect today in writing classrooms in conjunction with techniques exploiting authentic language materials (Folse, 2006; Huang et al., 2007).

Deliberate Teaching of Vocabulary

Despite acknowledging that "deliberately teaching vocabulary is one of the least efficient ways of developing learners' vocabulary knowledge," Nation (2008) maintains that this method of instruction is still an integral part of a" well-balanced vocabulary programme" (p. 98). Building on prior studies focused on the effectiveness of methodologies targeting the singular parts of the language as opposed to the whole (Ashton-Warner, 1963), Nation argues that vocabulary knowledge is best built up over a series of varied meetings with the word. At best, teaching can provide only one or two of these meetings, so other encounters must involve learners' deliberate study of a word, becoming acquainted with the word through meaning-focused input and output, and fluency development activities (Nation, 1990).

Second language learners are only capable of absorbing a small portion of what it takes to know a vocabulary item (what the vocabulary item means, what its forms are and where and how it is used in context) in any one lesson (Nation, 2007). Because these limitations persist even outside structured vocabulary lessons in "incidental learning,"

wherein learners encounter the word in oral speech or written text, Nation recommends that vocabulary instructors raise learners' awareness of the form, use and meaning of the word by designing "message-focused activities" that call attention to the role of the item in context (2008, p. 98).

Fostering a consciousness of the word also implies the development of what Nation terms "lexical awareness," or "developing an interest and focus on consciously considering aspects of language, language learning and language use" (2008, p. 167). Lexical awareness may involve a range of goals, from sparking or enhancing learners' interest in their L2 in general, to more specifically facilitating their interest in L2 vocabulary-learning. The advancement of techniques integrating the development of learners' lexical awareness in vocabulary instruction and in other areas of second language learning are recently starting to gain popularity among researchers (Okabe & Yokoyama, 2007; Mantyla & Huhta, 2010), though it is expected the establishment of further strategies to enhance learners' awareness through deliberate teaching of vocabulary will blossom in years to come.

Vocabulary Learning through Context

In his proposal for fostering lexical awareness through explicit instruction of multiple levels of vocabulary knowledge, Nation (2007) stresses a concentration on context. True acquisition takes place "in the context of message-focused activities involving listening, speaking, reading, and writing, and where the teaching deals with items that learners see as being totally relevant for that activity" (2008, p. 98). In other words, the environment of the vocabulary activity is equally important for teachers to consider when integrating various modes of input/output that contain the target vocabulary items.

Sternberg (1987) echoes the importance of the environment of the vocabulary learning, stating outright that "most vocabulary is learned from context" (p. 89). Sternberg reasons that the bulk of potential vocabulary items to learn contests the arguments that favor the use of memorization or keyword strategies (1987). Memorizing long lists of vocabulary items is not only painstaking and impractical, but also ineffective in terms of long-term retention. Training learners to read and interpret the temporal, spatial, value, stative descriptive, functional descriptive, causal/enablement, class membership and equivalence cues offered through the context of a word equips learners with the skills to deduce meaning, form and even use from context (Sternberg, 1987, p. 92).

One take on vocabulary learning through context hinges on the learner's ability to guess from context. This method is commonly associated with drawing inferences about a word's meaning based on the surrounding words in a written text, though, Schmitt (1997) contends, "context should be taken to mean more than just textual context;" spoken discourse, including verbal and nonverbal stimuli, and visual imagery have been utilized for learners to guess meaning from context (p. 209).

However, those opposing a solely context-driven approach to vocabulary instruction argue that the process whereby learners distinguish meaning from context is problematic for both second language learners and teachers. The variability of the contexts in which a word appears (from children's magazines to academic journal articles to news broadcasts) may be immense and may cause confusion for the learner in ascertaining the appropriate register of use. Sternberg (1987) also acknowledges that "multiples occurrences of an unfamiliar word can be detrimental" for the student who confronts complications linking the information given in the cues, or worse, only notices the reinforced peripheral elements of the word

which are mistaken for being central to the word's meaning (p. 92). Also, in terms of guessing from context, even advocates warn vocabulary instructors that selecting appropriate contextualized instances is complex, as the context must be dense with sufficient clues and arranged close enough in physical proximity to enable accurate guessing of the target vocabulary item (Huckin, Haynes & Coady, 1993).

Multimedia and Computer-Assisted Language Learning Approaches

While the use of multimedia sources and computer-assisted language learning activities, both included components in the designed task for this study, is becoming popular among second language vocabulary instructors trying to integrate accessible technological tools into the classroom, some instructors still resist incorporating these modes of learning into their methodologies. Brinton (2001) remarks that she "often assume[s] that the reason why we should use media when teaching second or foreign languages are self-evident to experienced classroom teachers" until she hears colleagues' comments project their "inability" or "unwillingness" to use media in the classroom (p. 460). Brinton is overwhelmed by the lack of ambition some teachers have towards integrating audio and visual materials, which lend authenticity, meaning and motivation to learners, into the second language classroom, and remains professedly unsurprised and unmoved by teachers' retorts against the use of media (namely lack of funding for sources, increased preparation time, inflexibility of the syllabus, etc.).

A mountain of second language learning research suggests that the students' interaction with media and involvement in computer-assisted tasks promotes heightened engagement with the TL material and the establishment of more meaningful, lasting connections with the content. Teachers who integrate multimedia and/or computer-based

approaches in their vocabulary teaching create a student-centered learning environment which is often collaborative, democratic and empowering for the student manipulating the technology. This "holistic learning approach [is] aimed at employing modern technology to trigger students' ability to act with words and create social realities in and out of the classroom, and thus to facilitate learning" (Debski, et. al, 2005, p.121).

Regarding vocabulary learning, interaction with computers and media allow learners to transcend previously-acknowledged hierarchies of vocabulary knowledge (ranging from passive recognition to active recall) and delve into the interrelated subknowledges of a word (knowledge of production forms, morphological, grammatical, semantic, associational, etc.), investigating and exploring the target vocabulary at multiple levels (Laufer & Goldstein, 2004).

Though some teachers are apprehensive of changing current classroom techniques pertaining to vocabulary instruction, there are surely familiar grounds on which these instructors can build. As Segler, Pain and Sorace (2002) note, integrating existent vocabulary learning strategy (VLS) taxonomies into the computer-assisted classroom should not be perceived as unfeasible. The taxonomies "have been developed for traditional classroom-type learning and tend to be incomplete in terms of strategies or factors arguably important for vocabulary learning," so departures from the conventional definitions of VLS should be welcomed as refreshing, updated takes on perhaps tried and true classics (2002, p. 409).

One such outlet for developing vocabulary subknowledge while allowing for teachers to build on current practices to introduce media and computers into the classroom is via LanguageQuests. LanguageQuests, the activity chosen for participants to complete in this

study, are computer-based, communicative activities which offer "realistic, content-oriented, functional, task-based foreign language learning" (ECML, 2007). LanguageQuests utilize internet resources in innovative ways to assist second language acquisition on broader or more concentrated topics (Dodge, 2002). Only having begun to explore the potential for these web-based activities in the last several years, applied linguists are still investigating the benefits LanguageQuests could have expressly for vocabulary learning.

Individual Learning Model

A leading model in second language classrooms, the individual learning model is associated with traditional second language instruction. The individual learning model, sometimes termed *self-directed* or *autonomous* learning, is one of the most widely implemented models in second language vocabulary instruction, and remained relatively unchallenged until work of social psychologists and ethno-linguists in the mid 20th century.

Prominent studies on individual language learning (Piaget, 1965; Chomsky, 1965) have primarily centered on the role of individual cognition in the learning process; the teacher assigns work to students, who complete their assignments individually by calling upon their individual cognitive resources. Proponents hold that interaction with other learners in the classroom creates an asymmetrical power dynamic and unbalanced social status among members of collaborative learning groups, especially common among adults (Piaget, 1965). The result translates to a dominance of select powerful group members and initiates pressures to conform to dominant members' expectations, all factors Piaget (1965) notes as rarely leading to actual cognitive learning. Advocates of individual second language learning also maintain that working alone promotes independence and, with this autonomy comes an increase in communicative skills: the ability to use the language in unplanned situations,

flexibility in accessing a range of sources to obtain linguistic and factual information, setting individual goals regarding topics of personal interest to study (October, 1990, p. 61).

The individual learning model has come under much scrutiny by linguists, psychologists and behaviorists whose specific criticisms will be addressed in the upcoming section. The purpose for covering the individual learning model at the conclusion of this section and not earlier to draw the distinctions between this model and the model implemented in this study, the collaborative learning model.

As mentioned at the start of this section, separating these models and reviewing them one by one does not imply that each model is used singularly in second language vocabulary instruction. Rather, several models are often employed in unison as the models' collective goal converges at successful vocabulary instruction regardless of their variant foci. Despite the fact that many models on vocabulary learning already exist, vocabulary acquisition researchers continue to seek ways in which vocabulary learning can be enhanced to yield long-term, meaningful learning.

The Collaborative Learning Model: Constructing shared understandings

The collaborative learning model, in which students "collaboratively construct and produce knowledge through social interaction and communication" (Fang & Warschauer, 2004, p. 308), is a classroom approach supported by teachers and researchers across a variety of disciplines in their work with learners of varied backgrounds, ages and cultures. Collaborative learning, sometimes termed cooperative learning, social learning or group-learning, is championed for its contributions to the learners' social and individual development, as students engage collectively in building interpersonal skills, problem-solving, constructing shared understandings, and also strengthen their relationship to the

community at large. The collaborative model is of particular relevance to this study, as it is one of the two learning models researched, so greater attention is paid to its implementation in second language learning classrooms. This section of the literature review provides a brief account of how the collaborative learning model originated, covers basic tenets of the model and observed benefits to the learner, describes the role of the collaborative model in the second language learning classroom, then details the current change underway regarding current and future directions of empirical research on collaborative learning.

One of the earliest pioneers of the collaborative learning model was Lev Vygotsky, a psychologist best known for his work in psychological and social development and interpersonal communication. Vygotsky (1978) became an influential researcher in second language learning, child development and cultural-historical psychology through his emphasis on the social aspect of individual learning and thinking, processes he later elaborated as *cultural mediation* and *internalization*. Challenging predecessors' and cognitive psychologists' research focusing on an individual learner's cognition as a process separate from her environment, Vygotsky asserted that thinking is a social activity that is shared between two or more people, and that thinking eventually becomes an internalized action that reemerges as an individual accomplishment (1978). It was his proposition of the *zone of proximal development* (ZPD), the difference between what a learner can accomplish on her own and what she can accomplish with the help of others, that spurred serious investigations into the power of cooperation in learning (Vygotsky, 1978).

Building on Vygotsky's work, educational psychologists created the cooperative learning model, which concentrated on "guided learning as an impetus for developmental change" (Brown, 1989, p. 397), as a response to traditional classroom organizational

structures. Research on the benefits to the learner quickly followed implementation of the collaborative, or group, model in the classroom.

Research findings show numerous individual and societal benefits resulting from an integration of collaborative structures into pedagogical approaches. The individual learner who transitions into a collaborative learning environment experiences significant improvements in learning outcomes (i.e. meeting or exceeding outlined curricular goals) (Sharan, 1980), enhanced critical thinking skills (Gokhale, 1995), feelings of encouragement and camaraderie (Barnes & Todd, 1997), interdependence with other group members, perceptions of authorship in knowledge acquisition (Bruffee, 1999) and a sense of shared constructions of meaning (Au, 1980).

In addition the model's advantageous effect on the individual, collaboration also delivers benefits to society. Bruffee (1984) notes that collaborative learning environments enable students to transfer the social skills honed in the learning group to meaningful participation in "the conversation of mankind." "The first steps to learning to think better are learning to converse better and learning to establish and maintain the sorts of social context, the sorts of community life, that foster the sorts of conversation members of the community value," (Bruffee, 1984, p. 640). Asking a student to be cognizant of her role as a contributing, indispensible group member in the classroom, Bruffee contends, equates a request for the learner to be cognizant of her place in the community at large, thus getting her to perceive herself as a conscious, valuable citizen within a broader society (1984).

Such consciousness of "self" situated within a larger "community" becomes a particularly relevant asset to a second language learner, a student who must navigate her way through a language and/or culture which may be unfamiliar. In ESL learning settings,

wherein students of varied language backgrounds converge in a classroom and work toward the common goal of second language acquisition, a cross-cultural interpersonal dynamic is established in the partnerships where learners must collaboratively use already-learned language skills, learn to negotiate, discuss, analyze and make decisions with a classmate in the target language. Collaborative learning models, especially in the ESL context, allow for students voices to be heard, not only by the instructor, but also their fellow classmates; allowing for sharing of and listening to learners' stories and opinions remains one of the most critical aspects of the language learning process (Nunan, 1992).

Through the sharing of personal voices in the classroom, participation in collaborative learning structures also helps to cultivate learners' socialization skills. As students learn to work with others towards a common goal, pooling their individual expertise to produce a collective conclusion or product, a sense of interdependence is created whereby students share responsibility with their group members and are held accountable for their individual contributions to the team, in ESL and EFL settings (Wragg, 1984). Because learners are working through a language that innately involves familiarity with cultural contexts of the target language, language socialization, the interrelated social practices of language learning and cultural learning, is shown to occur more fully in situations where learners must collaborate (Mohan & Smith, 1992).

In conjunction with the feelings of involvement from participation in collaborative activities come a wealth of benefits concerning the academic achievement of individual learners. For less competent learners, cooperation enables an environment where they can witness and learn the language learning strategies of successful learners (Kohonen, 1992). In observing how successful language learner teammates approach unfamiliar language areas

(grammar, vocabulary, syntax), less linguistically competent learners gain insight into learning and coping strategies in their L2. The interdependence of collaboration also affects the learners' comprehension of tasks and objectives, as members work together to maximize their own and their teammates' understanding (Kohonen, 1992). A situation similar to peer tutoring emerges in collaborative environments as learners pool their strengths to collectively work to meet their shared language learning goals.

However, the collaborative model, as with most learning models, is not without disadvantages. After studying a group of foreign language learners at the high school level in Los Angeles, California, Rymes (1996) found that complications surfaced regarding clashes in individuals' self-centered goals. The researcher posits that while he considers collaboration among students an essential part of effective second language learning, instructors may confront complications "integrating students' own perspectives and experiences with what collaboration is and how it works" (p. 409). It is essential to ensure learners are familiar with collaboration, the group-oriented processes involved and potential beneficial outcomes that could (Rymes, 1996).

Research on collaborative learning is currently undergoing a shift in focus. Whereas in previous decades researchers concentrated on "establish[ing] whether and under what circumstances collaborative learning was more effective than leaning alone," empirical studies of late have shifted the spotlight to understanding how independent variables concerning the learner and her learning environment factor into interaction within the group (Dillenbourg et al., 1996, p. 189). Another modification in current research regards conceptualization of the subject of investigation. Earlier research on collaboration in the classroom centered on the individual learners and how they worked within the group. Recent

research perceives the group, as opposed to its separate components, as the unit to investigate. Such understanding will lead to a discovery of the elements that allows for effective individual gains in learning.

Due to the perceived advantages of collaborative learning, the versatility it affords to a variety of language learning situations, with learners of diverse backgrounds and profiles, and in juxtaposition with other learning models, and the reality that, as Savignon (2001) cites, the process of meaning making in language learning --and learning in general--is of a "collaborative nature" (p. 15), research into implementation of the collaborative model in the second language learning classroom seems destined to continue.

Learner Attitudes and Motivation in Second Language Vocabulary Learning

L2 instructors must also consider a plethora of other factors affecting students' current and future second language acquisition, regarding her study of L2 vocabulary. When instructors spend time not only teaching and testing the assigned curricula, but additionally seeking to ensure their students are developing positive attitudes towards the content and the process, a plausible, promising outcome may be that the students are transformed into motivated lifelong language learners of their L2.

Learner Attitudes towards their L2

Second language researchers have dedicated a considerable amount of time and energy to the exploration of learner attitudes and their effect on second language acquisition. The general consensus amongst researchers' findings rests on the idea that positive attitudes boost learners' interest in study of the second language. Nonetheless, how to cultivate these positive attitudes is not well-understood.

In an early work by Curtin (1979) on attitudes of adult second language learners, the integration of the learner into the target language culture (through something as substantial as studying abroad, or simply through intensified contact with the target language culture in the language learning classroom) is the key to enhancing the learner's positive attitudes towards L2 acquisition. Curtin maintains that students "have to be persuaded that success in language learning depends upon the degree to which they integrate themselves with the 'native environment' of the language" (p. 281). This type of integration, Curtin holds, promotes personal connections between the learners and the culture, thereby creating amicable ties with the content and affirming their decision to study the L2.

Another focus of research on learner attitudes involves learners' views about the acquisition that has already taken place. In his longitudinal case study on the oral production and vocabulary of a single subject studying Hebrew, Altman (1997) had the participant keep a journal tracking the progress he made in his L2. He found that "learner attitudes expressed in the journal entries were indicative of stages of acquisition," with positive entries alluding to prior stages of acquisition and negative entries referencing current language learning areas being studied (p. 86). Altman proposed that future research employ comparable introspective, self-report techniques so researchers may gain access to learners' thought processes, and therein attitudes, that affect perceptions of their past, current or future acquisition.

Other researchers focused on the role of the learner's personal social background when inspecting learner attitudes towards her L2. Jones (1950) found that young second language learners' attitudes towards their L2 are significantly affected by their parents' linguistic backgrounds (whether or not the parents speak or have studied a second language), with heightened positive attitudes in children whose parents are bilingual or have had

increased exposure to/contact with their respective L2. Later work by Gardner (1968) continued to examine "just how dynamic and potent the role of the parent might be in the language-learning situation" (p. 141). Gardner insisted that *active* parents, who consciously encourage their children in learning a second language and monitor the children's progress and accomplishments, positively influenced the children's attitudes towards second language learning and even influenced the child's performance in other learning situations.

Conversely, the power of negative attitudes seems just as influential in determining a learner's success or failure in achieving her language learning goals. Oxford (1990) claims that learners' attitudes, be they positive or negative, impact their choice of language learning strategies, the specific actions, behaviors, steps or techniques a learner uses to improve her comprehension, internalization and use of her L2. "Negative attitudes and beliefs often [cause] poor strategy use or lack of orchestration of strategies," Oxford says, causing learners to experience feelings of disappointment or failure as language learners and further attempt to disengage from the second language learning process (1990, p. 35).

Learner Motivation to Learn their L2

There are many potential influences on learners' attitudes towards their L2, and it remains an objective of second language instructors to help facilitate environments that encourage these positive attitudes in and out of the language learning classroom. The reasoning behind such avid support for learners' positive attitudes lies in the motivation students experience along with their optimistic outlook towards their second language, a component that propels learners' ambition and drive to reach their target language goals.

In what is regarded as the first empirical study on motivation in second language learning, Dunkel (1948) examined how tempting subjects with promises of financial reward

may motivate learners to learn vocabulary in a second language. Though the study did not yield statistically significant findings, Dunkel's work was the start of a subsequent swell of second language learning research on learner motivation.

Years later Gardner and Lambert (1959), building on work done in the field of social psychology, completed the first multivariate analysis on the relationship between learner aptitudes, attitudes and motivation. In this study, the researchers defined motivation within an ethnolinguistic domain as "characterized by a willingness to be like valued members of the language community" (Gardner & Lambert, 1959, p. 271). This definition fit nicely into social psychologists' delineation of motivation in terms of the pressure, or even sense of despair, a learner requires --in her personal learning goals and radiating the social context in which she is situated --to learn her L2 in a timely manner (Clement, 1980). Motivation to learn vocabulary, according to Gardner and Lambert's (1959) ethnolinguistic definition, may originate with the pressure a learner feels to meet the objectives of the classroom or, in ESL environments, the daily demands of the native speaking environment: the need to communicate effectively in order to secure food, housing, a job, etc.

Melding prior descriptions of motivation with later research that proposed the *Integrative Motive Dimension*, a measurement which attempted to project a leaner's proficiency based on a number of factors , including primarily learner attitudes and motivation in the L2 (Gardner & Lambert, 1972), Gardner put forth the *socio-educational model* (1982), a learning model that examined a learner's personal, social and cultural characteristics (intelligence, language aptitude, motivation, anxiety) as interrelated features affecting her second language acquisition. Gardner's model, along with his suggestion of learner *integrativeness* (1983), which considers a learner's genuine desire to learn the

language so as to become psychologically closer to the target language, served to inspire research into learner attitudes and motivation in bilingual learning environments (Merisuo-Storm, 2006).

Another take on the perception that motivation is affected by the learner's sense of integration, or psychological closeness, with the target language community involves the degree of self-integration a learner experiences in the language learning process. Nation (1997) notes how a learner's sense of ownership in the L2 acquisition process greatly affects attitudes towards and motivation in learning the L2. Nation holds that when students are given the power of choice with regards to the class content and follow their interests, even in something as relatively minute as choosing what book to read, it initiates feelings of self-involvement and investment in the second language learning process and the L2 itself and results in an increase in their motivation for second language learning, both in and out of the classroom (Nation, 1997). The stronger sense of connection and elevated enthusiasm contributes to learners making meaningful associations with their L2, causing intensified motivation and sparking improvement in learners' second language acquisition (Ellis, 1991).

Still, motivation cannot always be the result of successful development of positive learner attitudes towards an L2. In her empirical study on Japanese EFL students' attitudes towards their L2, LoCastro (2001) finds that "more than professed positive attitudes towards learning English," or a desire "to acculturate to the target language culture or norms of communication," it is the aspiration to establish a self-identity in their L2 that motivates learners in their second language acquisition (p. 69). Nevertheless, the realization of learners' creation of a self-identity in the second language would presumably generate positive

attitudes towards their accomplishment, further strengthening learner motivation in their second language acquisition.

Learner motivation, recognized as the condition that leads learners to achieve their goals in their L2, and positive learner attitudes are viewed as inextricable constituents involved in prolonged success in second language acquisition. While learner attitudes and motivation continue to remain among the most highly investigated topics in current second language learning research, researchers have primarily examined learner attitudes and motivation in second language learning as a whole, rather than examining attitudes towards and motivation in particular subsets of language learning. The reason for not dedicating a large portion of this section to reviewing studies on learner attitudes and motivation in L2 vocabulary learning, the focus of this thesis, is that the research on attitudes towards and motivation in vocabulary learning is relatively sparse. Though some researchers contend that it is ineffectual to examine attitudes and motivation in certain subsections of the language, because "language is a whole...[and] any attempt to fragment it into parts... destroys it" (Rigg, 1991, p. 522), it still seems relevant to consider that different factors influence learners' attitudes towards different subsections of their L2. Establishing how instructors can best promote positive learner attitudes and heightened motivation to study L2 vocabulary should be a prime concern for second language learning researchers and is the matter of discussion in the following section.

Learner Attitudes and Motivation in Vocabulary Learning

Because the focus of this study is on influences on attitudes towards English language vocabulary learning, it seems appropriate to review what little research exists on learner attitudes and motivation towards L2 vocabulary acquisition processes.

One researcher who examines attitudes and motivation in second language vocabulary learning is Paul Nation, a second language learning researcher and instructor who has dedicated his work to providing language instructors with links between theory and practice on vocabulary teaching. Whereas other researchers have touched on the issue of learner attitudes and motivation in discussions of L2 vocabulary learning and teaching (Gardner & Lambert, 1972; Graves, 1986; Prince, 1996), Nation has conducted the most in-depth research on the subject, carefully analyzing prior and current research to present useful recommendations regarding curricular decisions involved with vocabulary instruction.

Nation's chief contributions to issues of learner attitudes and motivation in English language vocabulary learning, without a doubt, revolve around his notion of *lexical awareness*, a term he coined to describe learners "developing an interest and focus on consciously considering aspects of language, language learning, and language use" (2008, p. 24). This idea of lexical awareness moves beyond the learner's ability to acquire vocabulary and delves into a stance towards her target language vocabulary and the vocabulary learning process.

Instructors wishing to grow lexical awareness in their learners must deliberately focus on vocabulary acquisition in their lessons, as well as have learners analyze the more entrenched aspects of the vocabulary words, such as words' semantic relationships and word etymology (Nation, 2007). A foremost benefit of encouraging lexical awareness in language learners is that awareness of a lexical item on a more profound level helps students "gain positive attitude[s] toward vocabulary learning, improving their learning skills, developing an enduring interest in the analysis of the vocabulary of different languages and of vocabulary

use, and increasing their understanding of the ways in which vocabulary is used for a whole variety of purposes" (Nation, 2008, p. 24).

Aside from growing learners' lexical awareness, another part of encouraging positive attitudes and motivation in vocabulary learning involves framing learners' perceptions of the vocabulary acquisition process. "We need to see learning any particular word as being a cumulative process where knowledge is built up over a series of varied meetings with the word" (Nation, 2008, p. 24). Once learners understand the scope of the vocabulary learning process--that it does not occur instantaneously, but rather through a number of assorted encounters--they begin to grasp the complexity of vocabulary acquisition and tend to be less frustrated when their recall is imperfect.

Collaborative Learning's Effect on Learner Attitudes and Motivation

Now that studies on attitudes and motivation in language learning and vocabulary learning have been examined, the review of literature addresses the learning model targeted in this study, collaborative learning, and its effect on learner attitudes towards and motivation to study the L2. In addition to the interpersonal skills, sense of connectedness to the larger community and personal academic learning strategies that are developed in collaborative learning environments, collaboration among classmates has also been shown to grow positive attitudes and increase learner motivation in the study of a second language. Yet, similar to the lack of research on learner attitudes and motivation in vocabulary learning, few researchers have investigated the effects on learner attitudes and motivation in the implementing the collaborative model in vocabulary instruction. This portion of the literature review will principally target the literature on learner attitudes and motivation in

collaborative learning environments and will conclude highlighting the few studies that concentrate on collaborative vocabulary learning's effect on learner attitudes and motivation.

Studies on motivation in collaborative learning initially encompassed research contrasting individual versus collaborative learning styles with regards to the outcome-based incentives afforded to learners (Johnson & Johnson, 1975). Researchers were "mainly concerned with whether cooperative settings result in better products or learning outcomes than competitive and individualistic environments" (Brown & Palincsar, 1989, p. 397). This early contrastive research, aimed at investigating the divergent outcomes (be they better physical learner-produced products or better exhibited learning outcomes) of seemingly opposing learning styles, failed to pay attention to the language learning process and the many benefits afforded to learners through the style in which they worked or studied their L2.

Current research on collaboration in the second language learning classroom is expanding to examine the learning process as well as the product, including the positive attitudes and increased motivation learners develop while working with others. In his contrast of the independent, competitive and collaborative learning models, Kohonen (1992) outlines the differences between the pedagogical approaches and stresses why the collaborative learning model serves as what he terms "positive motivation" in language learning process (p.33). In individualistic classes, students work autonomously on tasks, use their own resources and proceed at a self-designated pace. In such environments, students perceive their individual goals as separate and disconnected from those of their classmates (Kohonen, 1992). In competitive learning situations, learners compete against one another to achieve their individual goals. If class work is evaluated, it is done so on an individual learner basis,

creating a "negative interdependence" as students reason they can achieve higher grades if other students do poorly, or at least comparatively worse (p. 33). Such a competitive learning environment does little to enhance motivation, as success is based on the individual's efforts; though some students may be motivated to work harder and achieve more, others may see themselves as failures and give up from the pressure or demands of the competition (Kohonen, 1992). By contrast, in collaborative environments, wherein students work together to achieve a joint goal, learner motivation can be higher. In the collaborative classroom, students "perceive that they can reach their goals best when others in the same learning group also do as well as possible" (Kohonen, 1992, p. 34). As a result, the student aims for her individual best, as well as that of the group.

Apart from a motivation to do their personal best, language learners in collaborative learning situations are also motivated to test out their ideas on group members more readily. Cooperative activities promote increases in learner risk-taking and creativity in the language learning process, and the individuals are more apt to function outside of their linguistic comfort zone and push their zone of proximal development still further (Dodge, 2002).

Learners' motivation to try out new linguistic elements in their L2 comes from the positive attitudes towards the task and the material that group members nurture through interdependence and responsibility to one another. Collaborative learners who feel committed to their teammates celebrate group members' successes and, through such social support, members tend to experience higher self-esteem in "an affirming and encouraging small group" (Kohonen, 1992, p. 35).

Still, with all the noted positive effects of collaborative learning on the individual learners, Dillenbourg et al. (1996) warn that "collaboration is not simply a treatment which

has positive effects on participants. Collaboration is a social structure in which two or more people interact with each other and, in some circumstances, some types of interaction occur that have a positive effect" (p. 205). Hence, awareness of the function, process and goals of collaborative learning on the part of the teacher and the student is crucial in ensuring the model effectively reaches class expectations.

Despite the large body of research on the influence of collaborative learning on attitudes and motivation in second language learning, few studies have been conducted exclusively on collaborative learning's influence on attitudes towards vocabulary learning. What research has been done has been largely conducted by Paul Nation (1983; 1990; 1997; 2001; 2008), but it does not concentrate on the role of collaboration in vocabulary acquisition or instruction. Because "there is consistent evidence to suggest that learning attitude and motivation are important predictors of achievement" (Kohonen, 1992, p. 22), and research on the collaborative learning approach continues to suggest positive learner attitudes and increased motivation are linked to application of the model in the second language learning classroom, the collaborative approach is most definitely worthy of further research in vocabulary acquisition.

The overarching goal of this literature review has been to report on the studies relevant to the issues covered in this thesis, namely collaboration, vocabulary development and learner attitudes and motivation. These studies collectively comprise the theoretical underpinnings for this study. In returning to the two research questions for this thesis, one addressing the impact of collaborative and independent learning on learner attitudes towards and motivation in studying English vocabulary and the other addressing the influence of the

learning styles on vocabulary development, it is apparent that much empirical research has been conducted on defining vocabulary knowledge, assessing vocabulary knowledge, formulating effective vocabulary instruction techniques and sparking positive learner attitudes in second language learning as a whole. However, there is a considerable gap in the research on the impact of collaboration in vocabulary learning and on how to promote positive attitudes and motivation in L2 vocabulary learning. Figure 2.4 provides a visualization depicting the gap in second language learning research among the three bodies of research on relevant to this study: research on, research on learner attitudes and motivation, research on vocabulary learning. As seen in the diagram, existing research on learner attitudes and motivation in vocabulary learning has been conducted by Nation (1983, 1990, 1997, 2001, 2007, 2008). The research on the effect of collaboration on learner

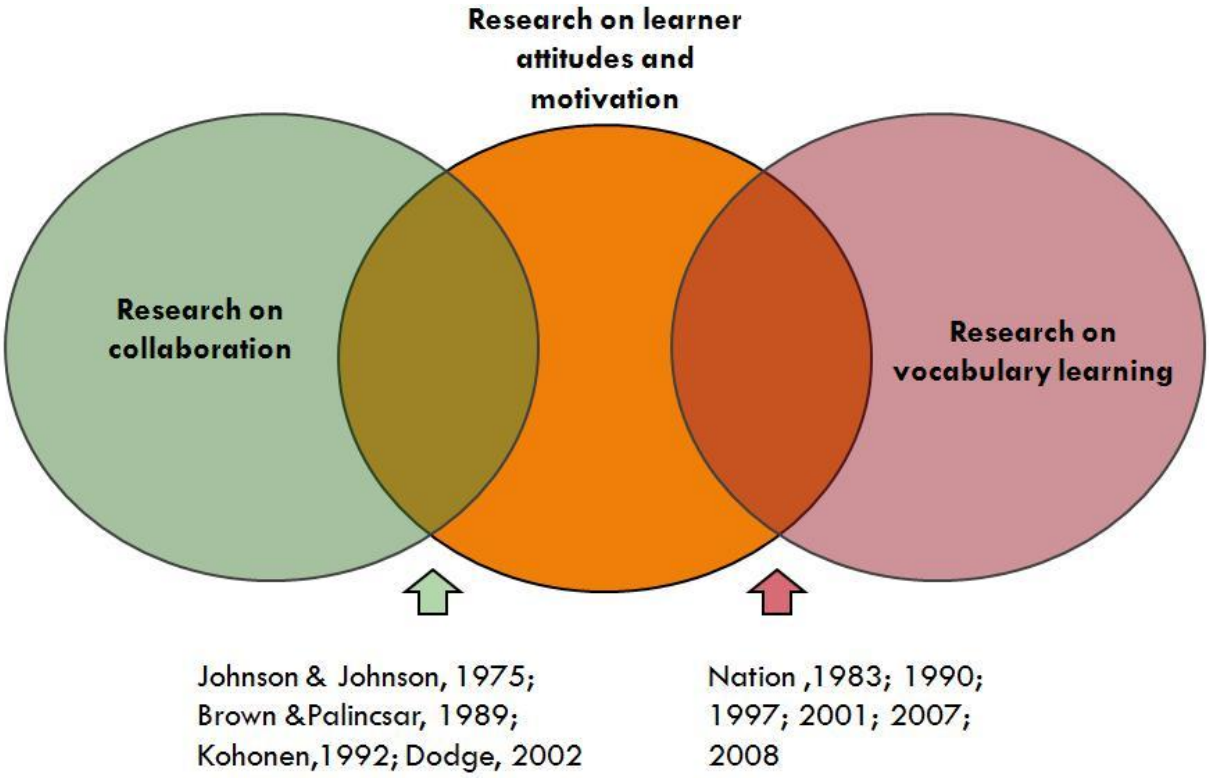


Figure 2.4: Exposing the Gap in Second Language Learning Research

attitudes and motivation is equally sparse and has only been examined by a few researchers. The intersection of collaboration in vocabulary learning and building positive learner attitudes and motivation towards studying L2 vocabulary is where this thesis aims to target, so as to help bridge the divide in research and, hopefully, establish a precedent for future research in on the issues.

CHAPTER 3: METHODOLOGY

Chapter 3 gives an overview of the methodology used in the research study. The chapter gives a description of the subjects participating in the study, the materials created, accessed and utilized, details concerning the setting in which the study took place, and a summary of study procedures, from institutional approval to data collection. The chapter closes with a explanation of the analysis of data regarding the research questions in terms of both quantitative and qualitative methods.

Participants

This research study included 24 participants. All participants were non-native English speaking undergraduate and graduate students enrolled in of Iowa State University's English 99R course, an ESL service course offered by the university's English Department during the spring semester of 2010. Participants ranged in age from 18-32 years, with 96% of students (23 of 24) aged 18-25. Participants reported having studied English between 2-14 years, with 88% of the participants (21 out of 24) having studied English between six and ten years. See Appendix A for a detailed breakdown of information regarding the learners participating in the study.

Though all participants were enrolled in the same course, participants from three separate sections of the course (Sections 1, 2 and 4) were included in the study so as to incorporate the maximum number of subjects in each treatment group. Because an insufficient number of students in the collaborative learning group (designated Section 4 of the English 99R course) volunteered to participate in the study, an additional section (Section 1) was added to increase the number of participants and to balance the number of participants in each individual treatment group. The collaborative learning group comprised participants

from Section 1 and Section 4 of the English 99R course and included 12 students overall (4 from Section 1 and 8 from Section 4). The independent learning group included 12 students, all enrolled in Section 2 of English 99R. Participation in the study was entirely voluntary and no student in any section of the English 99R course was excluded for any reason other than individual desire to not participate in the study.

All subjects were of roughly equivalent English language proficiency levels, as all had placed into the English 99R course according to their demonstrated reading performance on the English Placement Test, a test created and administered by the English Department and given to all non-native speakers of English at the start of their study at the university.

The rationale for selecting these particular students was that the goals of and the curricular materials designed for the study directly relate to the course objectives of the ESL Service Course English 99R: to enhance non-native speakers' reading comprehension skills through the development of effective reading strategies, including the development of vocabulary. Because vocabulary learning is a primary focus of this study, the English 99R class was selected based on the connections of this study's objectives and the course's objectives.

Materials

LanguageQuest Creation and Rationale

To investigate the role of collaborative and independent learning in vocabulary learning and learner attitudes towards and motivation in vocabulary learning, a task was created by the researcher for students to complete, either with a partner or individually. The researcher-designed task was a LanguageQuest, a computer-mediated activity similar to a WebQuest, but intended specifically for language learning environments. Like WebQuests,

"inquiry-oriented activit[ies] in which some or all of the information that learners interact with comes from resources on the internet" (Dodge, 1997), LanguageQuests employ a task-based, leaner-centered approach to learning through online resources. The LanguageQuest modifies the concept of a WebQuest to target "communicative, realistic functions of SLA" (second language acquisition) (ECML, 2007). The project-oriented nature of LanguageQuest activities engages learners in hands-on application of an L2 amidst the completion of a given task with the L2. The tasks serve as a conduit for project completion. Additionally, PrOCALL (Project-Orientated Computer Assisted Language Learning) literature says that "interaction in such [project-oriented] classes creates unique learning opportunities" as "the language produced in them is linguistically different from the language of more traditional classrooms" (Debski, et al, 2005, p. 122).

Each task involved in the completion of this LanguageQuest "provides a goal and focus for student energies and it makes concrete the curricular intentions of the designer" (Dodge 2002). Table 3.1 on the following page details gives the specifications for each individual task included in the LanguageQuest, detailing what the task requires of the student, a description of the process in which the participants engage, the language area of focus according to Bachman and Palmer's (1996) knowledge areas of language, and a list of the technological tools required to complete the LanguageQuest.

This LanguageQuest was intentionally designed to be a demanding, highly interactive and process-oriented activity that would challenge participants in their individual or collaborative work. One of the more complex elements of the LanguageQuest is the participants' (either individual or collaborative) investigation into words' etymologies, including the incorporation of information regarding the origins of words borrowed from

Table 3.1

LanguageQuest Task Specifications

Task	**Description**	**Language Area**	**Technology Required**
Familiarization with etymology	Gain understanding of etymology by interacting with media in audio, visual and written texts in L2. Students access online Rss feeds, websites and dictionaries to gain greater understanding of what etymologists do and what the study entails.	**Textual & grammatical knowledge-** ·students need to know how sentence formation and cohesive structure to utterances to grasp content of websites in both written and aural texts. Subsequent tasks are not possible without deep understanding of what etymology is. **Sociolinguistic knowledge-** ·students come to understand how English words are rooted in other languages.	Internet access to resources referenced on LangaugeQuest site (possibly Quicktime to download a podcast explaining etymology): Rss feeds, etymology podcasts, relevant etymology websites
Choosing words for project	Students will access known vocabulary and acquire new words by choosing words from the given list which they consider interesting or complex. Brainstorming about what to include in the word's map marker and selection of words may involve consulting with classmates or looking in a dictionary.	**Functional knowledge-** ·students must recognize and understand relationship between texts to achieve communicative goals of finding possible words for project. Manipulation of resources, such as an online dictionary and online etymology website, is essential. ·students access their imaginative knowledge to draw upon existing knowledge of similar English words.	Internet access: of online sources such as dictionaries and etymology-finding resources listed in the Instructions page.

Table 3.1 (continued)

Task	Description	Language Area	Technology Required
Researching chosen words	To research chosen words students must search through online reference texts to find appropriate information to compose brief summary. Research may involve processing a variety of written and aural texts in L2 that were designed for native speakers of the L2, thereby pushing learner to work at a proficiency level within or above learners' ZPD (Vygotsky, 1978).	**Organizational knowledge-** ·students must understand the rhetorical situation of website content in addition to grammatical cohesion of L2 language. Lexical items and syntax in texts on websites will likely be intended for native speakers of English, so student must also access their imaginative knowledge to interpret meanings. **Heuristic & manipulative knowledge-** ·students will need to manipulate sources to decide which information is credible and appropriate for the assignment.	Internet access: relevant sites listed in Helpful Links and Resources pages, dictionaries, word root websites
Gathering media materials	By exploring websites provided by instructor and other online resources the student finds, participants must process relevant video, possibly including audio, and visual texts and select appropriate texts relevant to representation of word roots' culture or language.	**Sociolinguistic knowledge-** ·collecting media materials is not possible without understanding how language is related to the setting (in this case, cultural context) from which the vocabulary item derived. ·student must employ imaginative functioning in L2 to decide on appropriate media representation for the word. **Textual knowledge-** ·understanding of word origin and cohesion of root word to original culture is necessary.	Internet: Flickr.com, YouTube.com, other Creative Commons or Public Domain sources from which to extract videos and static visual images

Table 3.1 (continued)

Task	Description	Language Area	Technology Required
Sentence creation	Students individually or collaboratively compose sentences using the chosen target vocabulary item. The instructor reviews sentences to ensure the word is being used appropriately in form and context.	**Grammatical knowledge-** ·learner must rely on her knowledge of grammar and syntax to compose sentences using the target vocabulary items. **Textual knowledge-** ·completed form must be coherent and comprehensible to teacher. **Cultural referential knowledge-** ·students must use pragmatic understanding of contexts for English word use before research.	Word processor or notepad on which student can work on composing her sentence.
Put points on map	When the instructor has reviewed the participants' research, media element and sentence, the learner is ready to put her individual marker on the collective class map. Participants navigate map tools in L2 to complete their map markers.	**Functional knowledge-** ·student uses manipulative functions in L2 to contribute to collective class Google map by following directions given by instructor in class . **Grammatical knowledge-** ·student must ensure all written text abides by English language conventions, including proper spelling and correct sentence structures.	Internet: Google Maps

Bachman & Palmer's (1996) *Areas of Language Knowledge* (p. 68) referenced for completion of this table

other world languages. The rationale for designing an etymology-based investigation of the target language vocabulary items is that an examination of a word's etymology has been noted by researchers as one possible technique to pique learners' interest in the future study of other English language vocabulary (Nation, 2007). Interest in the words' etymology may also help to cultivate a deeper understanding of the meaning and use of vocabulary words, as

well the establishment of meaningful associations with and connotations of the target language.

Dodge's "WebQuest Taskonomy: a taxonomy of tasks" (2002) was frequently consulted during the creation of the LanguageQuest for this research study in order to assure all individual tasks (researching the designated vocabulary word's meaning and etymology, creating a sentence using the word appropriately in context, choosing a multimedia element to represent the country or culture of the word's origin) formed a cohesive end product that related precisely to the study's objectives. See Appendix B for a record of how the individual tasks included in the LanguageQuest designed for this study align with the task categories presented in Dodge (2002) and the curricular intentions of each task.

Computer and the Internet

The computer was an integral component of task completion. It was necessary that all participants, those in each of the three sections of the reading course, working independently or with a partner, use a computer to complete the LanguageQuest task. Also, because the LanguageQuest was an online activity, it was necessary that all students have access to the internet in order to gather data required for task completion.

In the collaborative learning group, the computer furthermore served as a medium through which the collaborating partners cooperated in order to complete the task. Participants in the collaborative learning group used a joint computer to research words, find multimedia elements fitting of cultures or countries of the words origins and compile their findings in a class map. In the independent learning group each participant completed the LanguageQuest on her own computer.

Language Learning Resources

Additional language learning resources were utilized during the creation of the Pre-Test Survey and the LanguageQuest. In the compilation of the Pre-Test Survey, word frequency lists were consulted to gather appropriate vocabulary items for the activity. Later, online language learning resources designed specifically for NNS users were collected for use in the LanguageQuest task.

Nation (1990) maintains that a primary decision at the onset of any type of second language vocabulary instruction regards the teacher's judgment concerning the value of the selected vocabulary items. In other words, language teachers must ask the question: is it worth spending time on the word or not? It is essential for the language instructor to select "personally relevant and interesting vocabulary" for learners to ensure the student is engaged in the language learning task, while working with both applicable and attractive content (Nation, 2001, p. 225).

Along with establishing that the chosen vocabulary word is valuable to the student, instructors must also ascertain that the selected word is truly representative of commonly used vocabulary in the target language (Schmitt, 2000). Word frequency lists are accessible collections of frequently used words in the target language and are typically the product of computational analyses conducted on one or several target language corpora. Though some word frequency lists contain highly specialized technical vocabulary relative to a certain discipline or genre of written or spoken text, the lists can be suitable for use by students and teachers in second language learning, provided the most appropriate list is chosen.

Yet, as Nation (1990) asserts, a caveat to using *only* word frequency lists in vocabulary instructions lies in the fact that the lists often disagree on which words appear

more frequently in spoken or written English texts. To bypass complications that may arise from the discrepancies between word lists, researchers recommend the use of various, reliable sources (word frequency lists, dictionaries, corpora) in the selection of vocabulary for pedagogical application to supply an ample database of potentially relevant words (Nation & Waring, 1997; Hill & Lewis, 1997).

To ensure the 75 vocabulary items included in this study's Pre-Test Survey (and those items later selected for use in the LanguageQuest task) would be relevant and useful for the participants to learn, as well as derive from an assortment of pertinent sources for use with participants studying in an ESL academic setting, several acknowledged word frequency lists, language learning dictionaries and corpora of academic written text were referenced to make certain a broad range of appropriate vocabulary items were collected. Among consulted English language word frequency lists were: *1)* the General Service List (West, 1953), containing 2,000 words identified as having the greatest "general service" to ELLs and complete with frequency data and various word meanings, *2)* the Academic Word List (Coxhead, 1998), providing a specialized vocabulary for ELLs preparing for academic study in their second language, and considered to contain more formal, rather than technical vocabulary (Nation, 1990), *3)* the Longman Dictionary of Contemporary English (2007), supplying a list of the 3,000 most frequent spoken and written words from authentic language contexts through a clear and easy design for ELLs, *4)* WordCount's top 7,000 most frequently occurring words (2010), directly deriving data from the British National Corpus (2010), a collection of over 100 million spoken and written language samples from a variety of sources. The mixture of reputable sources referenced allowed for participants to meet the

vocabulary learning objectives in the reading class while working with words relevant to their context in an ESL setting.

Lastly, in their completion of the LanguageQuest activity, participants were provided links to online language learning resources designed expressly for NNS learner use for researching the designated words' meaning and etymology. A link to the online version of the "Longman Dictionary of Contemporary English" (2010), a highly accessible, student-centered resource which gives the word meaning, example sentences of the word used in context and word pronunciation, was offered so the study's participants could easily retrieve consistent, accurate definitions of the vocabulary words. Students were also directed to the "Online Etymology Dictionary" (Harper, 2001), a free online dictionary which provides the etymological derivations (language(s) of origin, meaning in original language(s), date of adoption into English, and other related etymological information) of English language words, to research their assigned words' etymology. Both resources presented the participants with reliable and comprehensible information regarding the vocabulary words' meaning and etymology.

Setting

The study took place in participants' normal classrooms for each of the three sections of English 99R in which students were enrolled. All classrooms were located in the same building on the Iowa State University campus. Two groups of participants (in Section 4, a collaborative learning group, and Section 2, the independent learning group) were enrolled in sections of English 99R that were held in a computer lab classroom. Participants in the other collaborative learning group (Section 1 of English 99R) completed the LanguageQuest in partners on laptops brought to class for the study.

All participants were contacted about the study through their regularly scheduled English 99R course which is held once weekly for a two-hour period. The study took place during the normal course hours for each class over the course of a three-week period. During the first week, students were informed about the study, distributed informed consent forms and administered the Pre-Test Survey, which elicited participants' personal information, tested the knowledge of 75 English vocabulary items and requested information concerning the learners' attitudes towards and motivation in English language vocabulary learning; the first week's session lasted approximately 45 minutes. During the second week, participants, either individually or collaboratively (depending on their designated treatment group's learning model), completed the LanguageQuest. This second session lasted nearly the entire two-hour class. In the last week of the study, participants completed the Post-Test Survey, which tested participants' knowledge of the vocabulary items they had worked with in the LanguageQuest during the week prior, and obtained participant responses to questions regarding their attitudes towards and motivation in vocabulary learning.

Procedures

Study Approval from IRB

After the project proposal was reviewed by the investigator's three-member Program of Study Committee and before data collection for this thesis began, approval was gained from the university's Institutional Review Board (IRB).

Gathering Participants

Participants were contacted in their ENGL 99R class during regular class hours. After obtaining permission from the instructor of each class to approach her/his students, each of

the three sections of ENGL 99R were visited and explained the study's foci, overall goals and procedures.

Pre-Test Procedures

During the initial meeting where students were informed about the study and participants were recruited, those agreeing to participate in the research project were administered a Pre-Test Survey (see Appendix C). This Pre-Test Survey served as the first of two stages of data collection for the research project. The goal of the survey was to determine learners' knowledge of 75 vocabulary items as well as establish learners' attitudes towards English language vocabulary learning. Their responses were later compared to their responses to similar questions in the Post-Test Survey.

After gathering participants' basic demographic information (name, age, gender, native language, number of years studying English), the survey elicited students' vocabulary knowledge of 75 English language vocabulary items utilizing Wesche and Paribakt's 1996 *Vocabulary Knowledge Scale (VKS)*, a format which enables learners to mark the stage that best describes their knowledge of each vocabulary item through recognition, recall and/or production of the word. Appendix C includes the instructions learners were given to complete Part I, the section concerning vocabulary knowledge, and, instead of including the entire list of 75 vocabulary with their accompanying VKSs, shows an example of how each vocabulary item was presented to the student with the VKS. The format was as follows:

[Vocabulary Word]

1. I don't remember having seen this word before.
2. I have seen this word before, but I don't know what it means.
3. I have seen this word before, and I think it means _____(synonym).
4. I know this word. It means _____ (synonym).
5. I can use this word in a sentence: _____(Write a sentence). (If you do this section, please also do section four.)

Appendix D provides a complete list of the 75 vocabulary items selected for inclusion in the Pre-Test Survey. Vocabulary items were selected based on their relevance (Zimmerman, 1997; Nation, 2008) to participants, students studying in an academic setting in an ESL environment, and the diversity of their etymology; for example, instead of selecting primarily words of French or Germanic origin, words from a range of native languages throughout the globe were chosen for inclusion in the Pre-Test Survey. The variety of etymological derivations provided for a more interesting and engaging LanguageQuest task which participants would later complete. The list in Appendix D also includes the country of origin of each word, as well as the word frequency list from which each word derived.)

Part II of the Pre-Test Survey included five-point Likert-scale test items which elicited participants' responses regarding their attitudes towards and motivation in English language vocabulary learning. Learners' marked the ordinal increment that best represented their attitudes towards vocabulary learning and motivation to learn vocabulary. A qualitative open-ended response item immediately followed each Likert-scale question so students could elucidate the numerical ranking provided. These open-ended responses also allowed for learners to justify or explain their Likert-scale response and for the study investigator to determine some of the factors influencing participants' reported positive, negative or neutral attitudes towards English vocabulary learning. Participants were given approximately half an hour to complete the entire Pre-Test Survey.

Task Procedures

Prior to the second meeting with participants, the completed Pre-Test Surveys were reviewed and subjects' responses to Part I of the survey --the section gathering information about learners' ability to recognize, recall and use 75 English vocabulary words--were

examined to establish suitable vocabulary items for each class to work with during the LanguageQuest activity. Each class's VKS responses were tabulated and those vocabulary items which participants exhibited the least amount of knowledge about were identified. Approximately ten vocabulary words per class (some of which overlapped from one class to another) were selected for study in the LanguageQuest. Vocabulary items were chosen based on two criteria: 1) at least 75% of participants in the class reported they either had never seen the word before or had seen the word, but did not know what it meant (marking *1* or *2* on the VKS), and 2) the words had diverse root origins. The greater the variance in word origin of the vocabulary items selected, the more appealing the LanguageQuest would appear to students. The vocabulary items selected for investigation in the LanguageQuest designed for each class are included in Appendix E.

In the week following participants' completion of Pre-Test Surveys, students in both treatment groups engaged in a computer-assisted LanguageQuest which involved learners in exploring the etymology of the vocabulary words chosen for their particular class. Participants in Section 1 and Section 4 of the ENGL 99R class completed the LanguageQuest with a partner and participants in Section 3 of ENGL 99R completed the LanguageQuest individually. Participants in the collaborative learning groups were allowed to choose their own partner[s] with whom to complete the LanguageQuest. No groups were larger than three participants.

For task completion, participants were given a web address for a LanguageQuest designed expressly for their class. The website opened with a greeting and brief explanation of the field of etymology (see Appendix F, Figure F1 for a screenshot of the introductory page to the LanguageQuest). Participants then proceeded to the Instructions page for

directions on how to complete the LanguageQuest (see Appendix G) and given a list of vocabulary items from which they could choose to begin their etymological investigation.

The instructions explained how students would conduct further research on their chosen vocabulary item, gaining information about the vocabulary word's meaning in English, etymological derivation, the word's meaning in the native language from which the word derived, and any other relevant information about when or how the word was adopted into the English language. Students were additionally asked to create a sentence using the word in context and find a multimedia element (video or static visual image) that represents the language or culture from where each word derived. When the gathering of data was complete, learners were to be guided by the instructor in compiling a collective class Google map of the world containing markers identifying the countries of origin of the target vocabulary items. These markers would incorporate the research findings, media elements and self-composed sentences containing the vocabulary words. Students were shown a sample of the expected outcome (see Appendix F: Figure F2) before embarking on their LanguageQuest and reminded to either work together with their partner (in collaborative learning groups) or work individually (in the independent learning group) to complete the task.

Both treatment groups received equal treatment by the instructor during task completion. Participants were guided through the process and instructions by the instructor, shown an example of the anticipated outcome, and introduced to supplementary resources that would assist them in their task completion. The only difference between the two groups' completion of the LanguageQuest was one treatment group involved students working individually to complete the task and the other treatment group consisted of students working

in pairs or small groups to complete the task. Screenshots of the final class maps created by each group of learners, including the results of their research on target vocabulary words are available in Appendix F, Figures F3-F7.

Post-Test Procedures

During the third meeting with the participants, all participants were administered the Post-Test Survey (see Appendix H). Part I of the Post-Test Survey, like the corresponding part of the Pre-Test Survey, tested participants' vocabulary knowledge of select items using Wesche and Paribakht's VKS (1996). However, the only vocabulary items tested in the Post-Test Survey were those 9-12 words participants worked with during completion of the LanguageQuest the week prior.

The second part of the Post-Test Survey measured subjects' attitudes towards and motivation in learning English language vocabulary. Similar to the Pre-Test Survey, test items in Part II of the Post-Test included both five-point Likert-scale response items and open-ended response items to gather both quantitative and qualitative responses from participants.

In addition to the same questions appearing in the Pre-Test Survey, two further questions were added to the Post-Test Survey. These questions elicited data regarding participants' views of how their participation in the LanguageQuest may have been different if they had worked with a partner/alone (the type of learning environment in which they did not complete the LanguageQuest task). Participants were also asked to explain how working individually/collaboratively (the learning style in which they did not complete the task) would have had a more positive, more negative or neutral effect on their attitude towards English vocabulary learning.

At the end of the survey, participants were thanked for their voluntary participation in the study. Email addresses were also gathered so students could, if they desired, receive feedback from the researcher regarding their performance on Part I of the Post-Test Survey which tested vocabulary knowledge.

Analysis

The study's research questions were examined using a mix of both quantitative and qualitative data analyses. Because both treatment groups, apart from completing the task either individually or collaboratively, received identical treatment with regards to amount of instruction prior to task completion, assistance throughout task completion, and equivalent amounts of time for task completion, the degree of differentiation in each treatment groups' change in responses from the Pre-Test to Post-Test Survey provides insight into how learners' attitudes towards learning and motivation to study English vocabulary, as well as vocabulary knowledge, were influenced by the learning model (individual or collaborative) used for the treatment group.

Table 3.2 provides an overview of how research questions were answered, and specifies the Pre and Post-Test Survey data used and the type of data analysis conducted to answer each research question. The table is followed by brief summaries of data analysis procedures performed in answering the two research questions.

Table 3.2

Overview of Analysis used for Research Questions

Research Question	Type of Analysis	Aim of Analysis	Data Used for Analysis
RQ1	Quantitative - basic statistical analysis determining mean, median and standard deviation of participants' change in attitude and motivation according to treatment group	To determine quantitative growth in participants' attitude in and motivation towards English language vocabulary learning by treatment group	Numerical responses to Likert-scale test items in Part II of Pre-Test and Post-Test Surveys
RQ1	Qualitative - comparison of change in individual participants' responses in attitude and motivation by treatment group	To gain greater insight into participants' reported attitudes in and motivation towards English vocabulary learning by treatment group	Responses to open-ended test items in Part II of Pre-Test and Post-Test Surveys
RQ2	Quantitative - independent, unpaired two-sample t-test (assuming equal variances between sample groups) measuring differences in vocabulary development between two separate treatment groups	To determine the extent to which learners' participation in a particular treatment group influenced their vocabulary development in target vocabulary items	Numerical responses to vocabulary items tested using the VKS (Wesche & Paribaht, 1996) in Part I of Pre-Test and Post-Test Surveys

Research Question #1

A restatement of this first research question is as follows:

What is the impact of participation in an individual learning environment or a collaborative learning environment on learners' attitudes towards and motivation in learning English vocabulary?

As shown in Table 3.2, both quantitative and qualitative data were employed in answering the first research question. The use both types of analyses was necessary in order to provide a more complete picture of how the learners' attitudes and motivation to study English vocabulary changed through the course of the study depending on their treatment

group. Participants' responses to Likert-scale test items allowed for the conducting of a basic statistical analysis of growth in attitudes and motivation while learners' responses to qualitative open-ended response questions offered deeper insight into learners' personal thoughts about their reported attitudes in and motivation towards English vocabulary learning.

Likert-scale response and open-ended response data were analyzed separately and based on the participants' treatment group (i.e., all participants' responses in the collaborative learning were analyzed as a unit, and the same for the independent learning group) to determine the impact of the learning style utilized during participation in the LanguageQuest task on participants' attitudes and motivation in English vocabulary learning. Observed differences between each group's change in attitudes and motivation are noted in the Results and Discussion section.

Research Question #2

A restatement of RQ2 appears below:

> *How is learners' vocabulary knowledge of the selected items influenced by their participation in an individual learning environment or a collaborative learning environment?*

The second research question was addressed using solely quantitative data collected from students' responses to vocabulary items using Wesche and Paribakht's (1996) Vocabulary Knowledge Scale. (See Table 3.2 for an overview of the data collection and analysis procedures.) Though mentioned earlier in the literature review, it must be reiterated that learners' vocabulary knowledge, and not their vocabulary acquisition, is being assessed in RQ2. As the authors (Wesche & Paribakht, 1996) maintain in their defense of the VKS, the scale evaluates not the acquisition which has taken place, but rather allows for a testing of

progression that has occurred in stages of recognition of a vocabulary item. Therefore, the quantitative analyses targeting RQ2 focus on the differences in treatment groups' vocabulary knowledge development, as opposed to acquisition.

In determining the degree of development in learners' vocabulary it was essential participants' responses on the VKS be reviewed for accuracy in both the Pre-Test Survey and the Post-Test Survey, as they may be mistaken or uncertain in their knowledge of a vocabulary item. This issue is specifically relevant when determining the learners' development of vocabulary knowledge. There is the chance students might have recalled or learned incorrect meanings or inappropriate contexts of use for a word and therefore not have exhibited an ability to recall and/or use the word appropriately in context, a necessary condition to confirm their developed vocabulary knowledge.

To ascertain learners' given definition and use of the vocabulary item was accurate and appropriate, Likert-scale markings of *4*, signifying "I know this word. It means _____," and *5*, signifying "I can use this word in a sentence: _____" were checked. In situations wherein participants used the word inappropriately in a sentence or gave an incorrect description of the vocabulary item, the researcher changed the response to *3*, signifying "I have seen this word before, and I think it means _____" to adjust for the inaccuracy in self-report of vocabulary knowledge. When participants circled a *1*,signifying "I don't remember having seen this word before," a *2*, signifying " I have seen this word before, but I don't know what it means," or *3* to represent their knowledge of a vocabulary item, the item was not reviewed. Markings of *3* were left without review, as these markings entail a learner's lack of confidence in her knowledge about a word.

The difference in individual learners' Likert-scale rankings between the Pre-Test Survey and the Post-Test Survey serve as the numerical value representing the amount of growth that took place with regards to each vocabulary item. The treatment group's overall growth was calculated by adding the numerical value representing individual's average vocabulary development and dividing this by the number of participants in the treatment group.

Because each treatment group worked with different vocabulary words in the LanguageQuest, it was impossible to conduct a statistical analysis of variations in vocabulary knowledge development for each student on a designated word and then compare the results to the other group. Such tests are also somewhat irrelevant to the objective of the research question, which aims at determining overall changes and differences in vocabulary knowledge and not precise knowledge concerning each single vocabulary item. As the learners in the collaborative group derived from two separate sections of the English 99R class and completed the LanguageQuest independently of one another, the data regarding knowledge of the words these learners worked with in the task were different; data from each collaborative learning group were separately analyzed before being compiled with the data of the other collaborative learning group. Each collaborative learning group's data, as well as compiled data of the entire collaborative learning treatment group, are shown and analyzed in the Results section to show collaborative learners' overall vocabulary knowledge development.

To distinguish the differences in the impact of learning style on learners' vocabulary knowledge, a bivariate data analysis of the mean vocabulary development per learner in each treatment group was conducted. Specifically, an independent two-sample t-test was

conducted using online applications from Graph Pad Software, an online statistical analysis tool and t-Test calculator. The t-Test enabled a measurement of the differences in vocabulary development between the two separate, non-overlapping treatment groups by using the two independent samples of data comprising the two treatment groups' individual learner mean value for vocabulary knowledge growth. In other words, the bivariate analysis enabled a determination of the empirical relationship between the two variables, thus showing whether the difference in amount of growth in vocabulary knowledge was significant depending on the treatment group's learning style.

The t-test produced the mean and variance of the two samples according to the number of observations (12 for the independent learning group and 12 for the collaborative learning group), the degrees of freedom (df) or N1+N2 – 2, the calculated t-Statistic and the standard error of difference. The t-Test was run using a zero value for hypothesized mean difference, and an alpha of 0.05. Because this research was interested in a two-tail t-Test [P(T<=t) two-tail], the absolute value of the Critical-t was compared to the absolute value of the t-Statistic. The confidence interval was calculated by subtracting the mean of the collaborative treatment group from the mean of the independent treatment group, and the confidence interval of this difference is provided. The p-value was also compared to the alpha (0.05) to determine statistical significance of the difference in vocabulary knowledge development from one treatment group to the other.

CHAPTER 4: RESULTS AND DISCUSSION

This chapter includes the results of quantitative and qualitative data analyses to answer the study's two research questions. The analyses are organized according to the corresponding research question they are intended to answer. A discussion of the results follows each analysis.

Research Question #1

The principal research question guiding this study concerns the impact of the learning model (collaborative or independent) on learners' attitudes towards and motivation in learning English vocabulary. Quantitative data, then qualitative data will be examined to answer RQ1.

Quantitative Data Analysis

The quantitative data analyzed in answering the first research question constituted participants' responses to the Likert-scale test items gauging attitudes and motivation in learning English vocabulary in Part II of the surveys. Because RQ1 focuses on the impact of each learning model on learners' attitudes towards and motivation in learning English vocabulary, the quantitative data analysis is concerned with the amount of change in participants' responses from Part II of the Pre-Test survey to Part II of the Post-Test Survey. Results are analyzed according to the treatment group in which the participant completed the LanguageQuest.

Table 4.1 displays the descriptive statistics for the differential change throughout the study in reported participant attitudes towards English vocabulary learning. The statistics are based on the treatment group in which learners participated in the LanguageQuest activity.

Table 4.1

Descriptive Statistics for Change in Participant Attitudes towards English Vocabulary Learning

Treatment Group	*Mean*	*Median*	*Standard Deviation*
Independent	-0.583	0	0.793
Collaborative	-0.167	0	0.835

The statistics represent the mean, median and standard deviation of change in participants' responses (from Pre-Test to Post-Test Surveys) to how they would rank their attitude towards learning English vocabulary (with 1 representing the most negative attitude and 5 representing the most positive). (Individual participants' responses and treatment group averages are displayed in Appendix I.)

Results in Table 4.1 show that the median amount of change in both treatment groups is 0. Though the number is not significant in terms of participants' reported, it is an indicator that few participants noted large amounts of change (be it positive or negative) in their attitudes after completion of the LanguageQuest activity. The mean in the calculated amount of growth in participants' attitudes yields a negative number for both treatment groups, signifying that participants, overall, reported a decline in positive attitudes towards English vocabulary learning after completion of the LanguageQuest activity. The independent learning group's average growth in attitude is -0.583, slightly more negative than the collaborative learning group's average growth in attitude, -0.167. These results indicate that, on average, participants in the collaborative learning style treatment group reported slightly less of a decline in positive attitudes towards English vocabulary learning in comparison to participants in the independent treatment group. The standard deviation for both treatment

groups is less than 1, but greater than zero. Still, the individual learning group participants' responses showed slightly less deviation (0.793) as compared to the responses of participants in the collaborative learning group (0.835). The difference in numbers is not significant.

Table 4.2 presents the descriptive statistics for the differential change in participants' reported motivation in learning English vocabulary.

Table 4.2

Descriptive Statistics for Change in Participant Motivation to Learn English Vocabulary

Treatment Group	*Mean*	*Median*	*Standard Deviation*
Independent	-0.083	0	1.24
Collaborative	-0.083	0	0.996

As with the reported change in participants' attitudes towards English vocabulary learning in Table 4.1, Table 4.2 displays the mean, median and standard deviation of change in participants' responses to questions asking how they would rank their motivation to learn English vocabulary (with 1 representing the most negative attitude and 5 representing the most positive). (Appendix J contains individual participants' responses and group averages.)

Table 4.2 shows zero to be the median amount of change in participants' responses with regards to reported motivation in studying English vocabulary; this number is a sign that most participants noted little change in their motivation to learn English vocabulary, a similar observation made from the quantitative analysis of learner attitudes. The mean of the amount of growth in participants' motivation to learn English vocabulary is identical among both treatment groups. Responses from both the collaborative learning group and the individual learning group produced a mean growth of -0.083, meaning each treatment group's participants reported a decrease in motivation to study English vocabulary. The collaborative

learning group participants' change in responses has a standard deviation of 0.996, while the independent learning group participants' change in responses has a standard deviation of 1.24.

To summarize, the quantitative results answering RQ1 indicate that, overall, very little change in learner attitude towards and motivation in studying English vocabulary occurred after participants completed the LanguageQuest activity. Regardless of the treatment group in which participants completed the task, the average change in attitudes and motivation yielded a negative number. If the calculated means had yielded a positive number, the results would indicate that an increase in learner attitudes and motivation had occurred and, therefore, that the corresponding learning style had an overall positive impact on the treatment group's participants. However, because the means of participants' collective growth in each treatment group are negative with regards to both learner attitudes and learner motivation, the results indicate that no positive growth occurred when examining the treatment group as a whole. This is not to say, however, that select individuals did not report an increase in their attitudes towards and/or motivation in English vocabulary learning (see Appendix I and Appendix J for individual survey responses). Nonetheless, the quantitative data analysis as a whole reveals that learners' attitudes towards and motivation in learning English vocabulary declined through the experiment, with the collaborative group showing only slightly less attitude decline than the independent group.

Qualitative Data Analysis

While the quantitative analysis provides a numerical representation of the change in learner attitudes towards and motivation in English vocabulary learning, a qualitative analysis of participants' responses to open-ended questions accompanying the Likert-scale

test items enables more holistic perception of participants' ideas about vocabulary learning. What participants could not express by merely circling a number, they were allowed to convey in an open-ended response following each Likert-scale test item asking them to explain their numerical response. The qualitative analysis focuses principally on the changes in learners' responses according to the treatment group in which they completed the LanguageQuest task.

Open-ended responses regarding learner attitudes towards vocabulary learning in the Pre-Test tended to categorize vocabulary as a prerequisite for academic success, while the Post-Test responses tended to center more on the need for vocabulary in communication. In justifying their Likert-scale responses, learners in both treatment groups acknowledged the usefulness of knowing vocabulary to succeed in their academic classes: "It helps in my future classes of studies" (Participant #6, Collaborative Group, Pre-Test);"I need to learn vocabulary to be good in academic classes" (Participant #17, Independent Group, Pre-Test); "I need English to study and survive" (Participant #9, Collaborative Group, Pre-Test). (See Appendix K for a complete record of participants' responses to both Likert-scale and open-ended test items gauging learner attitudes in Pre-Test and Post-Test Survey.) Yet, this trend seemed more prolific in both treatment groups in the Pre-Test Survey. No participants equated an extensive English vocabulary to success in academic study in the Post-Test. Post-Test responses concentrated more on general acknowledgement that "vocabulary is a basic skill" (Participant #11, Collaborative Group, Post-Test), and that learners "need [vocabulary] to communicate with others" (Participant #22, Independent Group, Post-Test). Possible explanations for this change in perceived need for vocabulary are later discussed.

Throughout all responses participants from both treatment group recognized the importance of vocabulary in building other proficiency skills in English: writing – "I would like to know some vocabulary for improving my writing" (Participant #7, Collaborative Group, Pre-Test), reading –"I need a huge vocabulary to read a textbook" (Participant #9, Collaborative Group, Post-Test), listening –" It can help me to understand what others said" (Participant #18, Independent Group, Post-Test), speaking – "I need to communicate with others" (Participant #22, Independent Group, Post-Test). One participant noted that vocabulary "really advocates in developing a person's language significantly" (Participant #23, Independent Group, Pre-Test). Generally, it seems these learners understand the importance of vocabulary in building their overall communicative competence, both in and out of the classroom.

Still, recognizing the need for developing their L2 vocabulary does not appear to boost participants' attitudes to study vocabulary. Just as positive attitudes declined in Likert-scale responses, participants' open-ended responses also show a decrease in positive attitudes towards English vocabulary learning. One participant's Pre-Test response justifying his Likert-scale ranking of the most positive attitude towards learning English vocabulary was "I need to understand my co-worker. Also, I want to make my life in America become easier" (Participant #8, Collaborative Group, Pre-Test); this same participant marked a two-point decline in positive attitudes on the Post-Test, noting that "I want to learn more vocabulary, but it spent me a lot of time" (Participant #8, Collaborative Group, Post-Test).

While a few participants marked positive changes in their attitudes throughout the study, there was a overwhelming sense of discouragement in Post-Test Survey responses, with some participants responding "I am sick about it" (Participant #1, Collaborative Group,

Post-Test), “I don’t want to learn English anymore” (Participant #17, Independent Group, Post-Test), and “I am not very interest in it” (Participant #24, Independent Group, Post-Test).

Possibly this lack of enthusiasm for learning English vocabulary is somehow connected to the notion of needing to memorize vocabulary items. Interestingly, the verb “memorize” appeared only in participants’ responses in the Post-Test Survey. Participants claimed it is “hard...to memorize so many words” (Participant # 15, Independent Group, Post-Test) and “I don’t like [to] memorize vocabulary” (Participant # 19, Independent Group, Post-Test). Pre-Test responses contained no mention of memorization. Such distaste for memorization may play a key role in determining the amount of motivation learners have in learning English vocabulary.

Unsurprisingly, participants’ open-ended responses concerning their motivation to study English vocabulary mirror their responses about their attitudes towards learning English vocabulary. (See Appendix L for a complete record of participants’ responses to Pre-Test Survey and Post-Test Survey Likert-scale and open-ended test items gauging learner motivation to learn vocabulary.) The need for learning vocabulary to enable successful academic study appeared in both Pre-Test and Post-Test responses among members of both treatment groups: “Learn more words help me improve in my academic course, so I’m interested in that” (Participant # 20, Independent Group, Post-Test); “My major needs me to learn a lot of vocabulary” (Participant #5, Collaborative Group, Post-Test); “It makes it easy for us in the long term, especially since all the courses here are in English” (Participant #23, Independent Group, Pre-Test).

Participant responses explaining their motivation also noted the essential role of vocabulary in developing other language skills: “I want to read newspaper smoothly”

(Participant #9, Collaborative Group, Pre-Test); "[Vocabulary] will increase my awareness when listening" (Participant #4, Collaborative Group, Pre-Test); Vocabulary is the foundation of English learning" (Participant #7, Collaborative Group, Post-Test).

As with the responses on learner attitudes, the acknowledged need for learning vocabulary does not signify motivation to learn vocabulary is high. The lack of time to study was cited in Post-Test responses as justification for a decrease in motivation. One participant noted "I have exams and performance recently, and I feel tired, so there is no much passion for me to learn" (Participant #10, Collaborative, Post-Test), and another remarked "I don't have so much time to study English" (Participant #22, Independent, Post-Test). Both of these responses come from students who either reported a drop in motivation or the same amount of motivation. Though participants concede that English vocabulary is a skill they need to "survive" (Participant #9, Collaborative Group, Pre-Test), in academic contexts as well as their daily lives in the U.S., the learners seem to be voicing a dilemma regarding learning English vocabulary; they "have to do it" (Participant #3, Collaborative Group, Pre-Test), but they do not have the time (Participant #22, Independent Group, Post-Test).

The qualitative and quantitative data reveal an overall slight decline in both attitudes and motivation from the start to the finish of the study. The question must be posed: what accounts for this negative shift in learner attitudes towards and motivation to study English vocabulary?

One potential contributing factor to participants' decrease in positive attitudes and motivation to study English vocabulary could be the exaggerated emphasis on vocabulary in this study. Post-Test responses from learners in both treatment groups revealed an exhaustion or sense of drudgery associated with learning vocabulary. Vocabulary learning was perceived

as something that had to be done, for school, for work or for daily living in an ESL setting. Participation in this thesis research may have called attention to learners' inadequacies, gaps in understanding or general incapacity to devote the required time to deliberate study of L2 vocabulary.

Another explanation for the decline in enthusiasm may be that learner felt they could be more candid with the investigator in their final interaction. Participants completed the Pre-Test Survey during their initial meeting with the investigator, and then completed the Post-Test Survey two weeks later, after having engaged in the LanguageQuest activity during the second week. It could be that the participants felt more reserved in their first meeting with the investigator and marked their Pre-Test Survey with insincere responses or overly positive responses regarding their attitudes and motivation in vocabulary learning. Maybe during the final meeting with the investigator, the learners felt they could be frank in their reporting of attitudes and motivation, knowing that this interaction would be the last communication with the investigator.

Another very probable explanation for the decrease in positive attitudes and motivation for vocabulary learning may have been learners' genuine dislike of the LanguageQuest task itself. Maybe participants did not feel exploring the etymology of the target vocabulary was an effective way of learning English vocabulary. It is possible learners did not feel the need to research the etymological derivations of words when they were only interested in their meanings in English and how to use them in context. Participants also may have disliked the investigative aspect of having to collect information about and media elements regarding the words which may have seemed irrelevant to their objective of trying to remember the meaning and use of the vocabulary items. Viewing the primary task on

which the study is based as an irrelevant activity disconnected from vocabulary learning most definitely would cause learner attitudes to decline.

The difficulty of the task may have been another component influencing the reported decrease in attitudes and motivation. It is possible the LanguageQuest was overly challenging for either individual learners or pairs of learners and, in such a situation, participants may have been discouraged by the amount of research required in the task. If participants' speed or quality of work did not meet their own or the instructor's expectations, learners may have felt they fell short in successful task completion. By contrast, if learners found the LanguageQuest task too simple or unchallenging, they may have given up or lost motivation in task completion, thus affecting their attitudes towards and motivation to study the content.

Still another feature of the LanguageQuest task that could have contributed to learners' decline in attitudes and motivation is the content itself. Because the vocabulary words researched in the LanguageQuest were selected by the instructor, learners may have considered the words obscure or irrelevant to their lives. Unknown vocabulary words that learners perceive as useless to learn may have not only done little to motivate them in completion of the LanguageQuest activity, but also soured their attitudes towards vocabulary learning. Second language learning professionals (Schmidt, 1997; Sternberg, 1997; Zimmerman, 1997; Read, 2000; Nation, 2007) ceaselessly emphasize context as a fundamental consideration for vocabulary teaching. If participants in this study did not sense that the vocabulary items in the LanguageQuest activity would be of use to them in the contexts in which they communicate in English, their attitudes about the study, or even vocabulary learning, could have been negatively affected.

Lastly, the learning style in which participants completed the LanguageQuest could have been a factor influencing participant responses. So far, the qualitative analysis has concentrated on the change in participants' responses from the Pre-Test to the Post-Test Survey. Yet to be examined are the final two questions on the Post-Test Survey which directly ask learners to remark on their preferred learning style for vocabulary learning and evaluate the impact the opposite learning style would have on their attitudes about English vocabulary learning .

The penultimate question on Part II of the Post-Test Survey asked learners to explain how their participation in the LanguageQuest activity would have differed if they had worked with a partner (included in the independent treatment group's survey) or individually (included in the collaborative treatment group's survey). 15 of the 21 learners that responded to this question mentioned that work with a partner was more beneficial. (See Appendix M for a record of all responses to the question of how participation in the LanguageQuest would have varied if it had been completed using the opposite learning style.) Seven of the 15 were participants in the independent treatment group, while the remaining eight had completed the LanguageQuest task collaboratively.

Some responses from the collaborative learners touched on the idea that more of the LanguageQuest activity could be completed with a partner. Collaborative learners noted: "It will be more efficient than working alone" (Participant #10, Collaborative Group); "Teamwork distributed the workload evenly, so that I don't have to do it all" (Participant #7, Collaborative Group). Others collaborative learners mentioned that having a partner motivated them more than it would have if they had worked alone: "If I had worked alone, I would not be motivated to learn (Participant #6, Collaborative Group). One person in the

collaborative group alluded to the knowledge the partner offered during the activity: "It gave me a chance to learn other stuff in partner work" (Participant #8, Collaborative Group).

Responses from the independent learners echoed sentiments of the collaborative learners. Some felt more could be accomplished in a collaborative environment: "I think we would have finished many words than an individual would do" (Participant #23, Independent Group). Others stated they would have been more motivated if they had worked with a partner, because "it push me to learn more from other person" (Participant #14, Independent Group). Other independent learners believed a partner could have offered additional insight or knowledge: "We can discuss some questions and he will tell me something which I don't know" (Participant #18, Independent Group); "Maybe my partner will tell me some words I don't know. It's good for study" (Participant #20, Independent Group).

By sharp contrast, only two of the 21 respondents commented that independent learning was or would have been the preferred style of vocabulary learning: "I don't like work with a partner. I like thinking by myself" (Participant # 19, Independent Group); "I can do the job myself" (Participant #9, Collaborative Group).

Responses to the final question on the Post-Test Survey--one which asked learners to state whether completing the task in the opposite learning style (with a partner for the independent group, alone for the collaborative group) would have had a positive, negative or neutral effect on their attitudes towards English vocabulary learning -- echoed similar sentiments to the preceding survey question. Twelve of the 23 participants who answered the final question mentioned that completing the task with a partner would have a more positive effect on their attitudes towards learning vocabulary. (See Appendix N for a record of participant responses to the effect of the opposite learning style on learner attitudes towards

English language vocabulary learning.) The benefit of learning from one another was the most popularly cited reason for why participants attributed more positive attitudes to collaborative learning: “I think working together will give us more chance to practice the word we search and could make us learn from each other” (Participant #1, Collaborative Group); “Personally, I liked learning together more than alone. Having participated and work together made me learn fast” (Participant #7, Collaborative Group); “I feel working with a partner during the LanguageQuest would have been more positive effect on my attitude towards English language vocabulary learning. He can help me a lot” (Participant #18, Independent Group). These responses all pointed to the collaborative relationship as one holding potential to offer greater breadth of ideas, personal assistance and efficiency of time and energy to the learning process.

Another common explanation for why collaborative learning may have yielded more positive attitudes towards vocabulary learning concerned the participant’s desire for interaction: “I think work alone during the LQ will have a more negative effect, cause more people will provide more ideas and we will have more interactions in it” (Participant #3, Collaborative Group); “It would have been more negative to work alone. It is good to interact while learning” (Participant #4, Collaborative Group); “More positive. We can discuss” (Participant #20, Independent Group). Collaboration, in these responses, is viewed positively in that it provides for dynamic, interactive sharing and discussion.

Still, not all participants believed the collaborative learning style would produce more positive attitudes towards vocabulary learning. Four of the 23 responses said that learning alone would produce more positive attitudes. Three of the collaborative treatment group’s learners noted that learning alone may have been more positive, while just one of the

participants from the independent treatment group reported independent learning would be more positive. One participant remarked "working alone makes me memorize the words deeply, because I do all the work individually" (Participant #2, Collaborative Group). Another mentioned that "working alone is more positive" because it "can give me a very quiet experience" (Participant #5, Collaborative Group). Interestingly, another collaborative learner noted that "working in the group is more fun at the start and as interest grows," but also that "working alone would be more beneficial" (Participant #6, Collaborative Group). Resonating in these examined responses is the idea that while collaboration may be "more fun" the individual learns vocabulary most "deeply" through "quiet" solitude. It is likely these learners found their collaborative group disruptive to their individual learning during the LanguageQuest activity. The role of the group partner, in these cases, may have been perceived as a distraction to the individual's learning process as opposed to an important part of and benefit to the learning process.

To recapitulate the results answering RQ1, though no outstanding differences were observed in changes in attitudes and motivation between the two treatment groups in the review of quantitative or qualitative data, there were differences in learners' responses to items gauging attitudes towards and motivation in English vocabulary learning. Participants noted more negative attitudes and decreased motivation in learning vocabulary in their Post-Test Survey responses, possibly resultant of personal frustration with their performance on Part I of the Post-Test Survey, lack of enthusiasm for the LanguageQuest task itself or disengagement with the target vocabulary items studied.

Apart from the change in learner attitudes and motivation from the beginning to the end of this experiment, participants, on the whole, considered collaborative learning the

preferred learning style over individual learning of vocabulary. Reasons for why collaborative learning was preferred to individual learning were that working with a partner allows for division of tasks in completion of an activity, discussion with a partner about the content and the learning process, and building upon each partner's separate individual vocabulary knowledge to create a clarified, precise understanding of a word. Strangely, learner preferences for collaboration in the open-ended items were not reflected in learners' responses to the quantitative items, as both groups noted almost equivocal declines in positive attitudes towards and motivation in studying L2 vocabulary.

As all other variables were controlled during the completion of the LanguageQuest (amount of instruction for task, length of time for project completion, assistance provided by the instructor during completion of the LanguageQuest, expectations for final outcome), the differences in the change in learner attitudes and motivation could presumably be attributed to the variant learning environment, or treatment group, in which each learner participated. Yet, because there was such little deviation in the participant responses from the independent treatment group and the collaborative treatment group, results concerning varied impact of learning style on learner attitudes towards and motivation in learning English vocabulary are inconclusive. The other possible conclusion to draw is that these environments are equally valid ways of learning vocabulary in second language classrooms.

Still, noteworthy in the report of research findings is the predominant partiality to the collaborative learning style in vocabulary learning. Regardless of participants' treatment groups, most learners mentioned that working with a partner to complete the LanguageQuest activity would be a more positive experience than working alone to complete the task. Congruently, learners from both treatment groups also remarked that working collaboratively

yields more positive attitudes towards English vocabulary learning. Thus, despite the global decline in learner attitudes towards and motivation in English vocabulary learning, participants indicated that collaboration yields more positive attitudes regarding vocabulary learning. The decline in motivation and attitudes, therefore, may be attributable to factors outside of the learning style in which participants completed the task.

Research Question #2

The second research question sought to determine the influence of the learning environment on participants' knowledge of the target vocabulary items. RQ2 was answered through a quantitative data analysis and the development in learner vocabulary knowledge was examined based on participants' treatment groups.

An analysis of the vocabulary knowledge development per learner in each treatment group required a comparison of each participant's responses to the target vocabulary words using the VKS assessment tool in Part I of the Pre-Test and Post-Test Survey. Because the collaborative learning group comprised 12 learners from two separate classes (four students from Section 1 of ENGL 99R, and eight students from Section 4 of ENGL 99R), the target vocabulary items used in each of the two collaborative learning groups' LanguageQuest activities were different. As a result, data marking the development of vocabulary knowledge for learners in the collaborative treatment group were first examined according to the respective collaborative learning subgroup's distinct lists of target vocabulary items.

Table 4.3 represents the mean vocabulary growth for each of the 24 study participants (calculated by subtracting the numerical Post-Test Survey VKS response from the numerical Pre-Test Survey VKS response per target vocabulary item and averaging the overall change in response per participant) and are organized according to the treatment group in which the

participant completed the LanguageQuest. In simply scanning results of individual participants' growth, it is evident the collaborative learners reported greater amounts

Table 4.3

Mean Vocabulary Knowledge Growth per Participant According to Treatment Group

Independent	*Collaborative*
0.916667	1.222222
0.583333	1.666667
1	1.222222
-0.16667	2
1.75	0.3333333
0.916667	1.555556
0.166667	1.777778
0.4166667	1.333333
0.6666667	1.111111
0.4166667	1.666667
0	1.222222
0.3333333	1.111111

of vocabulary knowledge development. All but one of the collaborative learners reported at least a full one point increase in their overall vocabulary knowledge. It was then important to determine the precise amount of growth in each treatment group.

To establish whether this difference in amount of growth in vocabulary knowledge is statistically significant based on the treatment group in which participants completed the LanguageQuest, a t-Test was conducted using the data from Table 4.3. Table 4.4 displays the results from calculating the mean, standard deviation (SD) and standard error of the mean (SEM) according to the number of participants (N) in each treatment group. As evidenced in the table, there is a striking difference between the mean growth in vocabulary knowledge

Table 4.4

Results of the Independent Two-Sample t-Test

Statistic	*Independent*	*Collaborative*
Mean	0.583	1.352
SD	0.519	0.431
SEM	0.149	0.124
N	12	12
t	3.9473	
df	22	
SED	0.195	
P	0.0007	

Note: df = degrees of freedom, SED = standard error of difference, P =the two-tailed value.

between the treatment groups. The independent treatment group's collective average growth is 0.583, while the collaborative group grew 1.352. This difference indicates that a greater amount of growth in vocabulary knowledge took place in the collaborative learning group. These numbers signify that overall, learners in the collaborative group more consistently reported greater amounts of increased vocabulary knowledge compared with learners in the independent group.

As the unpaired t-Test assumes the two treatment groups contain equal variances and the P value (0.0007) is quite low, it can be deduced that the variant treatments had a significant effect on learners' reported growth in vocabulary knowledge with statistically significant differences in groups' reported vocabulary knowledge development.

Despite the significance of these differences in vocabulary knowledge growth among treatment groups, another calculation must be noted before it can be said that other similar learner populations would yield like results. Not included in Table 4.4 are calculations of the confidence interval, an interval that uses sample size, variability and means to determine how reliable the resulting values would be in other learner populations. The difference in the

means of both treatment groups produced a 95% confidence interval of 0.365 to 1.172, meaning if researchers were to replicate this study using similar learners, there is a 95% chance that mean growth would fall into the confidence interval range.

Returning to the question posed in RQ2, the results show that learners' vocabulary knowledge is influenced by their participation in either an individual or a collaborative learning environment. It appears that learning style most definitely affects learners' reported growth in vocabulary knowledge. It should also be noted that both independent and collaborative treatment groups noted vocabulary development, though the collaborative group's development was significantly greater than that of the individual group. As the only variant to this study was the learning style in which the student completed the LanguageQuest activity, and the sample population exhibited the same variances, it seems that the differences between the participants' reported growth in vocabulary knowledge was whether they completed the task with a partner or individually. These research findings can be used to make assumptions about how second language learner populations studying in similar learning environments will respond to varied learning styles utilized in English vocabulary instruction.

CHAPTER 5: CONCLUSION

The final chapter of this thesis presents implications of the research findings from this particular study, cites the study's limitations and offers suggestions for future research on English language vocabulary instruction.

Implications

The intent of this study has been to examine the impact of two divergent learning styles on learner attitudes towards, and motivation in, English vocabulary learning and on the development of vocabulary knowledge. Because the data were derived from a representative sample of learners in an ESL university setting, inferences could be made about the potential effects of the two learning styles on larger populations of second language learners studying in higher educational ESL contexts. It is the goal of this section to suggest how findings from this research may be used to generate real-world applications in second language vocabulary instruction.

One important implication of the findings regards second language instructors' attention to learning styles that will promote positive learner attitudes and increased learner motivation towards English vocabulary learning. While overall positive attitude growth was small, participants did note an overall preference for learning vocabulary in a collaborative environment, remarking that a collaborative vocabulary learning experience would have a positive effect on their attitudes towards English vocabulary learning.

Participant preferences for collaborative language learning cannot entirely be unanticipated. Researchers who support collaborative learning claim that work with a partner "trigger[s] interaction and meaningful communication in the L2," which spark positive learner attitudes towards the content (Koenraad, 2006, p.2). Through the creation of "shared

meanings" (Downes, 2009) and in the exchange of information, knowledge and expertise amongst group members, collaborative environments form empowering social contexts that are "mediated by personal relationships, preferences and motivations" (Debski et al., 2005, p.121). Instructors can expect that the personal relationships that develop from decision-making and negotiation processes in collaborative learning environments help to establish lasting motivation for future explorations of the content in the TL, in addition to enhancing students' communicative competencies.

When selecting learning styles that fit the students and the curriculum, second language instructors should inquire about their learners' preferred learning environments. Through administration of a survey, individual or class discussion, or other means, determining learners' preferred learning styles, then attempting to incorporate these styles appropriately into in-class and at-home activities will not only serve to boost students engagement with the curriculum, but also show the students that the second language instructor is equally invested in the learners' success in language learning. Encouraging positive attitudes and sparking motivation in vocabulary learning rests largely on the pedagogical choices an instructor makes in the classroom and listening to learners' preferences to help inform these pedagogical decisions may help propel positive attitudes and increased motivation toward the content.

Another implication that can be drawn involves selection of an appropriate learning style to yield increased development of vocabulary knowledge. Data from this study show that the difference in reported growth in vocabulary knowledge was statistically significant based on the learning style in which the participant completed the LanguageQuest task. Because the collaborative treatment group showed a significantly higher amount of growth in

vocabulary knowledge compared to the independent treatment group, second language instructors should consider making use of collaborative techniques to enhance their own students' development in knowledge of the target vocabulary.

It should be mentioned that, as Dillenbourg et al. (1996) caution in their research, the claim cannot be made that "conversational processes are exclusive candidates for explaining the effects observed. The 'mere presence' of a partner can, in itself, be responsible for individual progress" (p. 205). In other words, the interactive communicative process involved in completing the task may not have been the sole source of increased vocabulary knowledge among collaborative learners. The growth in reported vocabulary knowledge may have been brought about by a range of other relevant contributing factors.

Perhaps one reason for the increased growth in vocabulary knowledge among collaborative learners was learners' sense of shared responsibility to complete the task, possibly causing an increased degree of engagement with and internalization of the target vocabulary. As Fang and Warschauer (2004) assert, in collaborative activities there is a push to "take initiative in learning the subject together," a possible cause for deeper or intensified learning (p. 312). Whatever the reason for the increased growth in the collaborative treatment group, second language instructors should consider incorporating cooperative learning activities into their vocabulary instruction to provide greater engagement with the language.

Other implications relate to task design. One implication for second language teachers is to create tasks which are suitably challenging for the learners. Because collaborative learning environments involve both partners in brainstorming, planning, negotiating, developing and revising content related to the assigned task, learners are capable of accomplishing more challenging tasks than they would if completing the tasks alone.

Collaborative learners are also more apt to take risks with the language and explore their creativity in the process of task completion (Dodge, 2002). As a consequence, instructors using collaboration in the classroom should create activities that are multi-layered, have higher expectations and which allow the second language learners to push the limits of their comfort zone in the L2.

Another implication involving task design pertains to the inclusion of technology and the use of multimedia texts in vocabulary instruction. The task designed for this study required students to use technology to actively seek authentic English language materials, resources learners could continue to use outside the classroom in real-life communicative contexts (Brinton, 2001). The task entailed learners manipulating online sources and media (including dictionaries, YouTube videos or Flickr images, and etymological Rss feeds) in the L2 to decipher what information was necessary or relevant for their project. By expecting students to achieve pragmatic task objectives through their interaction with technology and media in the target language, learners may develop a greater sense of connectedness to the larger community of native speakers of the TL (Downes, 2005) and enhance their sociolinguistic knowledge of the L2 in exploring real-world contexts of authentic language use (Bachman & Palmer, 1996).

Finally, there are also implications for the use of LanguageQuests or other project-based activities in second language vocabulary instruction. In the project-based classroom, each task "provides a goal and focus for student energies and it makes concrete the curricular intentions of the designer" (Dodge, 2002). Collaborative activities seem to fit especially well with project-based approaches in second language learning, a central premise of both being the focus on collective achievement as opposed to individual.

The LanguageQuest, a project-based activity, combines a series of highly interactive smaller tasks to form a cohesive end product (Dodge, 2002). LanguageQuest activities are highly adaptable for learners of varying proficiency levels, ages, native language backgrounds and learning contexts and are promoted as holding the potential for being "attractive, authentic and functional" venues for L2 learning (Koenraad, 2006, p.2). As with other project-based activities, allowing students to work collaboratively to complete a LanguageQuest, composing written, spoken and visual texts to form a unified end product that incorporates the target language vocabulary fosters further interest among learners in the partnership, undoubtedly affecting learner attitudes towards and motivation in studying the target language content.

Though the specific implications from this study will be best applied to higher educational ESL settings with advanced language learners, these suggestions could be implemented in other English language learning contexts as well. Adaptations could be made to suit the needs of learners of varying levels of English language proficiency, native language backgrounds, ages and environments of study (ESL or EFL) to effectively promote development of positive attitudes towards and motivation in English vocabulary learning, as well as enhance growth in vocabulary knowledge.

Limitations

Several limitations to this study must be noted. These limitations concern the structure of the study, the task design and the data collection and analysis, and involve issues of reliability and authenticity of content.

One limitation of the study was the low number of participants involved in the study. A number of the students who signed up during the initial meeting in the original two English

99R classes contacted were not present during the two consecutive class periods. Another potential factor affecting the study was the presence of two separate collaborative learning groups. In order to balance out the number of participants in both treatment groups after several participants in the collaborative learning group did not show up to all three study meetings, a third English 99R class was included in the study. The result created two separate collaborative learning groups whose data from Pre-Test and Post-Test Surveys were analyzed as one treatment group. The compensation for a low number of participants in the collaborative learning group may have influenced the findings. It would have been ideal to have each treatment group confined to one classroom, but circumstances made this unfeasible.

Yet another limitation relating to the small number of ELLs used in the study concerns the lack of diversity among study participants. All but six of the participants noted Chinese as their native language; though this is quite representative of the typical English second language classroom at this particular university, it certainly is not a diverse ESL learning environment. As the majority of participants derived from a similar linguistic background, data results --and, as a consequence, data analysis, interpretation, and implications for the use of the findings in other contexts—may be skewed. Were this study to be replicated, a more diverse body of English language learners should be recruited.

The difficulty of the task was another limiting aspect of the study. While it was intended that the task be challenging for participants, the LanguageQuest seemed more complex than expected for learners, especially those completing the task by themselves. Completing the many subtasks required by the LanguageQuest in such a short time period (one 110 minute class period) proved difficult for both pairs and individual learners, even

when each team/individual was researching only one or two target language words. A less demanding task may have enabled students to explore more of the target vocabulary items while feeling a greater sense of accomplishment with what they had completed. A consideration for future research would be to ensure the task is not overly complicated for the learner.

The authenticity of the context for the study's tasks is also uncertain. Computer-assisted tasks typically help to "create social realities in and out of the classroom" (Debski, et. al, 2005, p.121), and do so most effectively when the content is situated within authentic contexts of use. The LanguageQuest task designed for this study failed to emulate an authentic context of English language use and instead required learners to work on a project isolated from the social reality of authentic L2 usage. Additionally, the vocabulary items were selected and investigated without explicit connection to the authentic contexts in which they usually appear. Because the target vocabulary items were presented without being contextualized, (and also possibly because study participants knew they would not be tested on these words or encounter the words again in their disciplines of study), learners may not have felt the need to invest themselves in the vocabulary items as they would have if the words would have been introduced in an authentic context of use.

A major limitation to the data collection process involved the measurement tool used to assess learners' vocabulary knowledge. As mentioned in Chapter 2, Wesche and Paribakht's (1996) *vocabulary knowledge scale,* the measurement tool used to gauge the development of participants' vocabulary knowledge, has been criticized for having considerable drawbacks. One notable drawback found when reviewing students' responses concerned the uncertainty of how to properly judge appropriateness of use of the word in

context. The fifth and highest level of vocabulary knowledge on the VKS asks students to write a sentence using the vocabulary item. It is left up to the test administrator to determine if the vocabulary item is used appropriately in context. In instances where participants composed simplistic, unintelligible or slightly irrelevant sentences using the vocabulary item, establishment of appropriate use in context became ambiguous. This vagueness of use is a key issue when assessing vocabulary knowledge development, especially when the results of the assessment are being used as data to identify the degree of vocabulary knowledge development that has taken place. A different measurement tool, or a modified version of the VKS containing more explicit instructions about sentence composition, would be chosen if this research study was replicated.

A final limitation involved a consideration of a non-sampling error: that is, human error that interferes with an accurate portrayal of the true data results. The non-sampling error of particular concern in this study regards how test design suits the learner's capacities in the L2. Because the learners participating in the study were simultaneously enrolled in an English reading course and all activities associated with data collection (Pre-Test and Post-Test Surveys) and task completion (LanguageQuest directions, research, composition) were presented in written texts, the study's participants may have experienced difficulty understanding the content in written English, a medium in which they have demonstrated linguistic weakness. Non-sampling errors arising with misunderstandings of survey questions or task instructions could have affected the learners' responses and, therefore, the data and research findings. In an attempt to pre-empt such complications, qualitative open-ended response items were added to Likert-scale test items so participants could provide clarification of their response. Simplistic, straightforward language was also used in the

instructions and surveys to avoid learner misunderstandings. However, it is not clear whether these adjustments were sufficient.

Recommendations for Future Research

A well-known adage permeating second language vocabulary acquisition literature states, "When students travel, they don't carry grammar books, they carry dictionaries" (Stephen Krashen, in Lewis, 1993, p. iii). Not aiming to diminish the need for grammar instruction, or attention to grammatical competence in the second language learning process, the proverb draws attention to the fundamental role vocabulary plays in the communicative competence of second language learners.

Based on the results, several recommendations can be made for future studies on the effects of various learning styles on learner attitudes, motivation and acquisition in second language vocabulary teaching.

One suggestion is that future research on second language vocabulary learning investigate how assorted learning styles influence learner attitudes towards and motivation in studying target language vocabulary. Although second language learning research in recent years has given way to increased attention to the advancement of vocabulary learning techniques and methodology, few studies have explored how to cultivate positive learner attitudes towards the vocabulary-learning process. Positive attitudes promote heightened motivation to study an L2, not to mention increased self-confidence when communicating in the L2. Because the degree to which students invest themselves in the curriculum is indicative of their success in learning the second language (Curtin, 1979), how students develop positive attitudes towards vocabulary learning should be a primary concern of vocabulary instructors and of second language researchers.

Another proposal for future research involves investigating the impact of various learning styles on vocabulary acquisition. As opposed to looking at the learners' vocabulary acquisition in both treatment groups, this thesis focused on learners' vocabulary development; that is, this study focused on observation of the continuing process by which learners gain more knowledge about a word. Concentrating on the effect of diverse learning styles on vocabulary acquisition will enable researchers to see the specific benefits afforded by each chosen style.

Also, because there remains a sizeable gap in second language learning research on collaborative learning styles in L2 vocabulary instruction, future studies in the discipline should continue to examine how collaborative work affects vocabulary acquisition and attitudes towards and motivation in vocabulary learning. "Cooperative learning provides a viable, and in many contexts, a more effective alternative to the competitive ethic which dominates much educational thinking today" (Nunan, 1992, p. 10). Encouraging learner collaboration instead of individual competition in daily tasks also contributes to an increase in exposure to the target language, as learners gain opportunities to test out oral and aural skills in one-on-one work with partners. Additionally, as observed in this study, learners often prefer working with another student to working alone on vocabulary activities. Taking into account learner preferences for working with a partner should also promote further research on the collaborative learning style in second language vocabulary instruction.

More research incorporating interactive, computer-assisted vocabulary learning activities would also greatly benefit the field of second language learning. Debski, Jeon-Ellis and Wigglesworth (2005) remark that "the computer screen can be seen as a microcosm inviting interaction and extending the arena of the classroom, limited by the physical state of

objects it contains" (p.141). Allowing students to interact with technology to complete investigative tasks (as in the LanguageQuest activity designed for this study) while accessing resources in the L2 allows instructors to integrate curricular goals with online environments that are familiar to the students. Internet-based activities also provide the chance for learners to extend interpersonal communication to native speakers or fellow second language learners outside the physical classroom.

Still, despite the infinite possibilities a computer-assisted classroom may provide for second language learning, not all students will respond favorably to all designed computer assisted tasks. As seen in the mild dislike for the LanguageQuest task created for this study, some learners may find the computer-assisted activity tedious, overly complicated or disconnected from what they feel the linguistic goal is. Structuring tasks, whether they are computer-assisted or not, that are appropriate for the language learning goals and enjoyable for the language learners is another essential component of successful vocabulary instruction.

A final recommendation is for future research to encompass longitudinal case studies investigating the impact of various learning styles on vocabulary acquisition and on learner attitudes towards and motivation in vocabulary learning. Case studies, in particular, give the breadth and depth of data needed to understand the extent of potential benefit to the learner provided by a certain learning style. In the field of Applied Linguistics, longitudinal case studies of language learners are recognized "as a valuable means of illustrating issues connected with learning, using, and in some cases, losing another language" (Duff, 2007, p. 1). Case studies consider contextual variables, such as biographical, educational and social information about the research participants, and may use varied elicitation techniques to collect detailed quantitative and qualitative data. Implementing the case study approach in

future applied linguistics' research will assist professionals in understanding the scope of possibilities for different learning styles and classroom strategies in second language vocabulary learning.

As second language instructors and curriculum designers continuously seek ways to develop methodology for and materials in effective instruction of second language learners, consideration of learner attitudes towards and motivation in studying the content should be a primary concern. Understanding the potential for collaborative learning, as well as other learning styles, in the second language learning classroom may lead to modification of current practices or adoption of innovative approaches to pedagogy and may encourage positive learner attitudes, thereby enhancing students' chances at successful second language learning.

APPENDIX A: PARTICIPANT PROFILE

Participant #	*Course Section*	*Gender*	*Age*	*Number of years studied English*	*Native language*
1	99R1	M	20	8	Chinese
2	99R1	M	21	10	Chinese
3	99R1	M	18	6	Chinese
4	99R1	M	25	4	French
5	99R4	M	20	3	Chinese
6	99R4	F	25	10	Nepali
7	99R4	F	18	6	Chinese
8	99R4	F	19	8	Chinese
9	99R4	M	19	8	Chinese
10	99R4	M	18	9	Chinese
11	99R4	F	20	9	Chinese
12	99R4	M	19	8	Chinese
13	99R2	M	32	2	Chinese
14	99R2	M	22	6	Arabic
15	99R2	M	19	6	Chinese
16	99R2	F	18	9	Chinese
16	99R2	M	19	13	Chinese
17	99R2	M	18	6	Azerbaijani
18	99R2	M	19	8	Chinese
19	99R2	M	19	6	Chinese
20	99R2	F	19	10	Chinese
21	99R2	F	20	10	Chinese
22	99R2	F	18	8	Chinese
23	99R2	M	18	14	Arabic
24	99R2	F	18	8	Vietnamese

APPENDIX B: RECORD OF LANGUAGEQUEST TASKS

Tasks Based on Task Categories Based in Dodge's WebQuest Taskonomy (2002)

Journalistic Task	Students discover more about the vocabulary item by exploring the word's derivations.Participants beginning the LanguageQuest are presented with the question, "Have you ever wondered why the English language is full of so many peculiarities?" This question and the paragraphs that follow intend to spark the student thinking about the multitude of unfamiliar English vocabulary words and how some questions about the English language may be answered by exploring the roots of English words. Etymology-based websites and podcasts are put forth on this home page and again on and further links so students may further explore the field of etymology.
Retelling Task	Students investigate the where, when and why of the word and, in essence, retell the history of how it came to be adopted into the English language. From the opening site, students are then directed to a webpage displaying a sample of the outcome where they read about and view a physical materialization of the end product. The end product serves as a motivator for the students to "retell" the history, in their own words, of the derivation of the English word they have chosen. The instructions page then guides students through a step-by-step procedure for how the students can "retell" the history in both written and visual / aural texts.
Compilation Task	Students compile multimedia texts for markers on a class map. Each student (or pair) interacts with spoken, written and visual texts to create a collection of research about the etymology of the chosen word. Students then work on a collective class map to put their individual markers on the map. These markers are joined with those from other members of the class and all students' research findings are collected in one joint project.
Judgment Task	Students must make appropriate decisions regarding the content they should include in their final map marker. In researching their chosen word, students must decide which information is relevant and useful for a reader to understand the meaning and etymology of the target vocabulary item. In choosing a media element to best represent the country of origin of the English word, students should make judgements based on appropriateness of content and accuracy in representation of this country. When composing sentences using the word, students must decide how the word fits into the context, both in the syntactic operation and the semantic context.

*Consensus-Building Task (*relative to collaborative learning group)*	Participants in the collaborative treatment group work with a partner or partners to build consensus regarding the final product in the LanguageQuest. Each student must articulate her own opinions in the selection of appropriate research findings, selection of multimedia element and creation of the sentence which uses the target vocabulary word in context. Students in the group must also consider their partner's viewpoints and attempt to accommodate all group members. The result of these students' combined efforts is a end product which represents their work together.

APPENDIX C: PRE-TEST SURVEY

Pre-Test Survey

Name_____ Number of years I have studied English _____

Gender M F **Age _____ Native Language _____**

PART ONE

The purpose of this survey is to determine your knowledge of and ability to use the following English language vocabulary words. Please circle the number that best represents your knowledge of each of the following vocabulary items. Where appropriate, please write a synonym and/or sentence that shows your ability to use the word appropriately in context.

[Vocabulary Word]

1. I don't remember having seen this word before.
2. I have seen this word before, but I don't know what it means.
3. I have seen this word before, and I think it means _____(synonym).
4. I know this word. It means _____ (synonym).
5. I can use this word in a sentence: (Write a sentence. *If you do #5, please also do #4).

_____

**(75 words were tested using the above format. For a list of all 75 items tested, see Appendix D.)*

PART TWO

Please carefully read the questions and circle the number that best describes your response. Also, please explain your response below each question in the space provided.

My current attitude towards learning English language vocabulary is: (1 is the most negative, 5 is the most positive). Please circle one.

1 2 3 4 5

Please explain your response: _____
_____

I am motivated to study English vocabulary: (1 is "absolutely no," 5 is "absolutely"). Please circle one.

1 2 3 4 5

Please explain your response: _____
_____

Thank you for your responses! Your answers will be used to prepare an activity for you and your classmates next week.

APPENDIX D: LIST OF 75 VOCABULARY ITEMS SELECTED FOR PRE-TEST SURVEY

Word Frequency Lists Referenced: *Longman Dictionary of Contemporary English (2007), British National Corpus WordCount.org (2010), The General Service List (West, 1953), the Academic Word List (Coxhead, 1998)*

Vocabulary Item	***Language/Language Family of Origin***	***Word Frequency List Derived From***
Avocado	Nahuatl	BNC WordCount
Bay	French	General Service List
Belt	German	BNC WordCount
Boast	Scandanavian	General Service List
Brainwash	Chinese	Longman Dictionary
Breeze	Spanish	BNC WordCount
Bulk	Norse	Academic Word List
Canoe	Caribbean	BNC WordCount
Cargo	Spanish	BNC WordCount
Cash	Sanskrit	BNC WordCount
Cast	Scandinavian	General Service List
Chaos	Greek	BNC WordCount
Chili	Nahuatl	BNC WordCount
Cigar	Mayan	BNC WordCount
Coach	Hungarian	BNC WordCount
Cola	West African	BNC WordCount
Cork	Arabic	General Service List
Cruise	Dutch	BNC WordCount
Damp	German	General Service List
Dangle	Danish	BNC WordCount
Debt	French	General Service List
Deceit	French	General Service List
Drip	Danish	BNC WordCount
Fog	Danish	BNC WordCount
Heap	German	General Service List
Hindrance	French	General Service List
Hunk	Flemish	BNC WordCount
Jaguar	Guarani	BNC WordCount
Keen	Irish	BNC WordCount
Ketchup	Malay	BNC WordCount
Kneel	Greek	General Service List

APPENDIX D (continued)

Vocabulary Item	***Language/Language Family of Origin***	***Word Frequency List Derived From***
Launch	Malay	BNC WordCount
Lemon	Arabic	BNC WordCount
Lottery	Italian	BNC WordCount
Map	Punic	BNC WordCount
Mask	Arabic	BNC WordCount
Moose	Algonquin	BNC WordCount
Mummy	Arabic	BNC WordCount
Nuisance	French	General Service List
Pal	Romany	BNC WordCount
Plump	Dutch	BNC WordCount
Polo	Tibetan	BNC WordCount
Purple	Hebrew	General Service List
Rant	Dutch	BNC WordCount
Rip	Flemish	BNC WordCount
Scatter	Norse	BNC WordCount
Scold	German	General Service List
Scorn	French	General Service List
Scrape	Scandinavian	General Service List
Severe	French	General Service List
Sew	German	General Service List
Shack	Nahuatl	BNC WordCount
Shed	German	BNC WordCount
Shock	French	General Service List
Silk	Chinese	General Service List
Skirt	Scandinavian	General Service List
Skunk	Algonquin	BNC WordCount
Slim	Afrikaans	BNC WordCount
Squash (noun)	Algonquin	BNC WordCount
Taboo	Polynesian	BNC WordCount
Tang	Danish	BNC WordCount
Tank	Portuguese	BNC WordCount
Tattoo	Polynesian	BNC WordCount
Tea	Malay	BNC WordCount
Tender	French	General Service List
Tide	German	General Service List
Tobacco	Native American	General Service List
Tray	Scandinavian	General Service List
Trek	Afrikaans	BNC WordCount

APPENDIX D (continued)

Vocabulary Item	***Language/Language Family of Origin***	***Word Frequency List Derived From***
Wake	German	General Service List
Window	Norse	BNC WordCount
Wound	German	BNC WordCount
Wreck	Icelandic	General Service List
Yak	Tibetan	BNC WordCount

APPENDIX E: VOCABULARY ITEMS SELECTED FOR LANGUAGEQUESTS BY CLASS

**NOTE: Independent Learning Group was allotted more words than collaborative learning groups due to the need for greater number of vocabulary items in largest group where students worked individually.*

Independent Learning Group (Class: ENGL 99R, Section 2)

Word	*Language/Language Family of Origin*
Brainwash	Chinese
Cargo	Spanish
Cork	Arabic
Heap	German
Keen	Irish
Nuisance	French
Plump	Dutch
Scatter	Norse
Shack	Nahuatl
Taboo	Polynesian
Trek	Afrikaans
Wreck	Icelandic

Collaborative Learning Group (Class: ENGL 99R, Section 1)

Word	*Language/Language Family of Origin*
Bulk	Norse
Cargo	Spanish
Cork	Arabic
Dangle	Danish
Deceit	French
Jaguar	Guarani
Rant	Dutch
Shack	Nahuatl
Wreck	Icelandic

Collaborative Learning Group (Class: ENGL 99R, Section 4)

Word	*Language/Language Family of Origin*
Brainwash	Chinese
Canoe	Caribbean
Cork	Arabic
Damp	German

Collaborative Learning Group (continued)

Word	*Language/Language Family of Origin*
Hindrance	French
Launch	Malay
Scrape	Scandinavian
Taboo	Polynesian
Wreck	Icelandic

APPENDIX F: SCREENSHOTS OF LANGUAGEQUEST ACTIVITY

Figure F1: Introductory Page to LanguageQuest

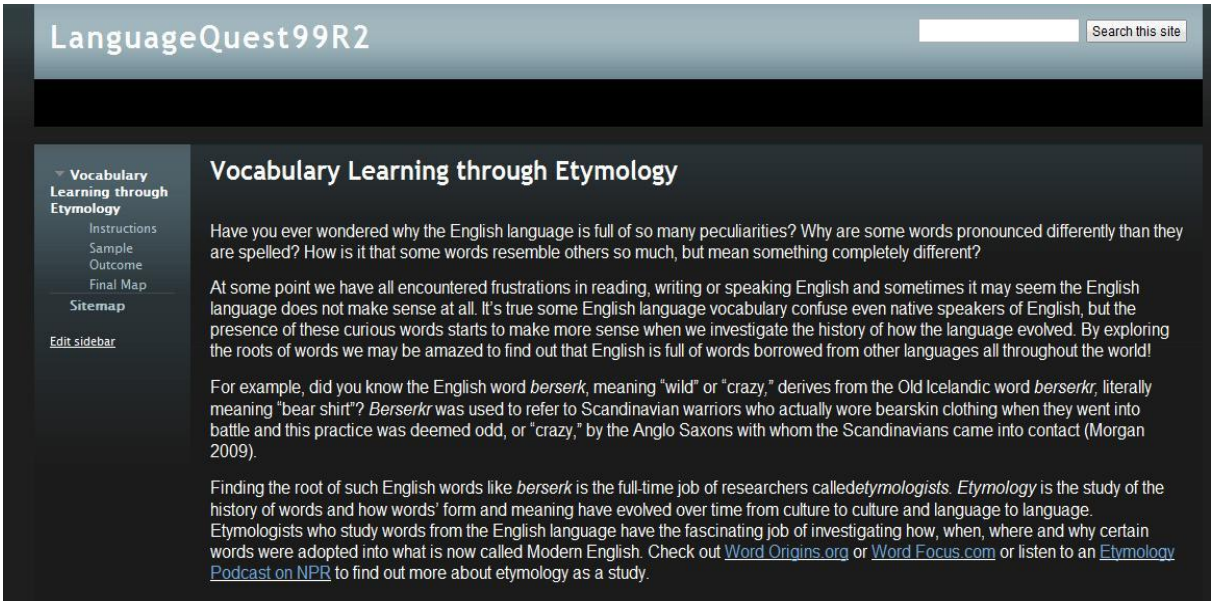


Figure F2: Sample of Expected Outcome

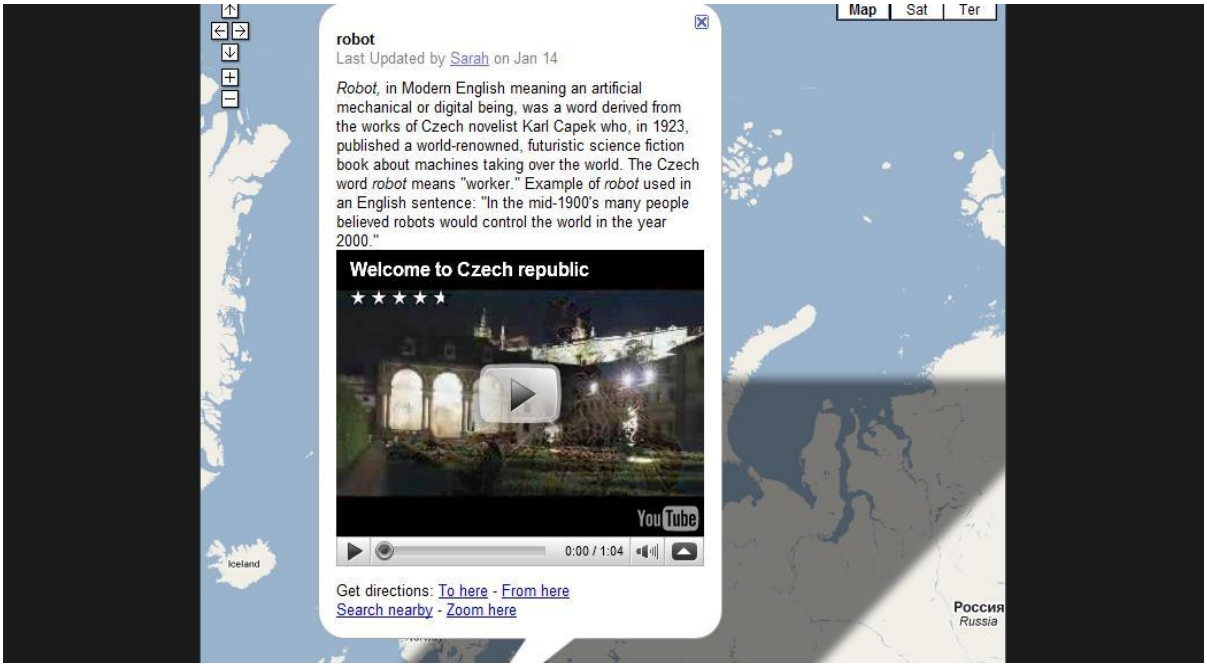


Figure F3: Final Class Map for Collaborative Treatment Group (Class: ENGL 99R, Sec. 4)

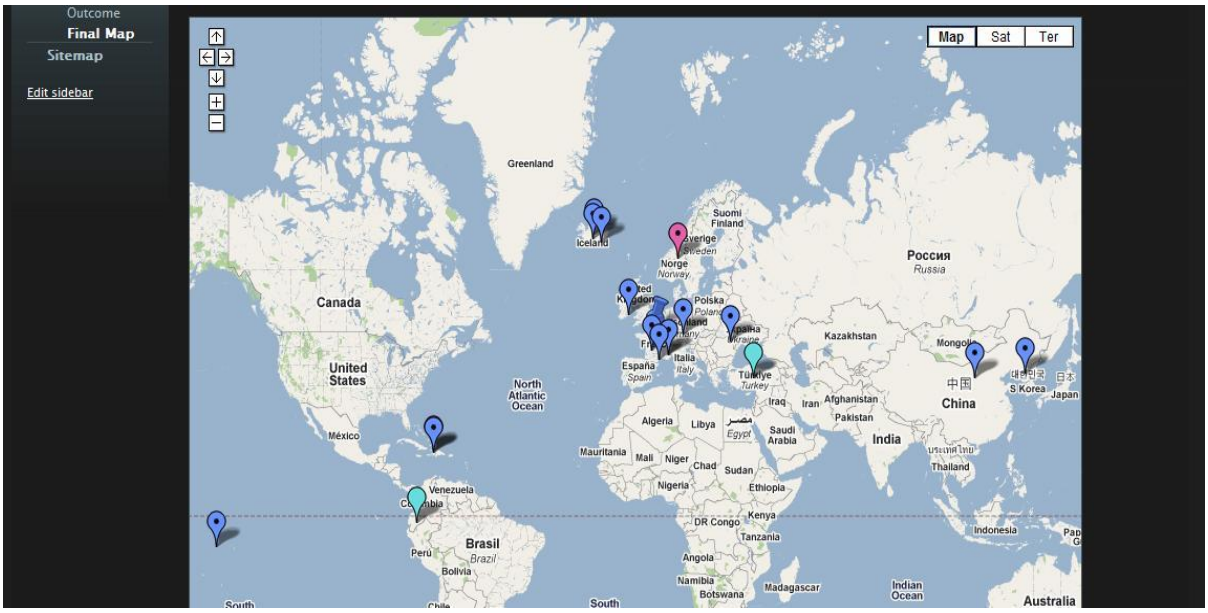


Figure F4: Final Class Map for Independent Treatment Group (Class: ENGL 99R, Sec. 2)

Figure F5: Sample Word Marker from Independent Treatment Group Participant

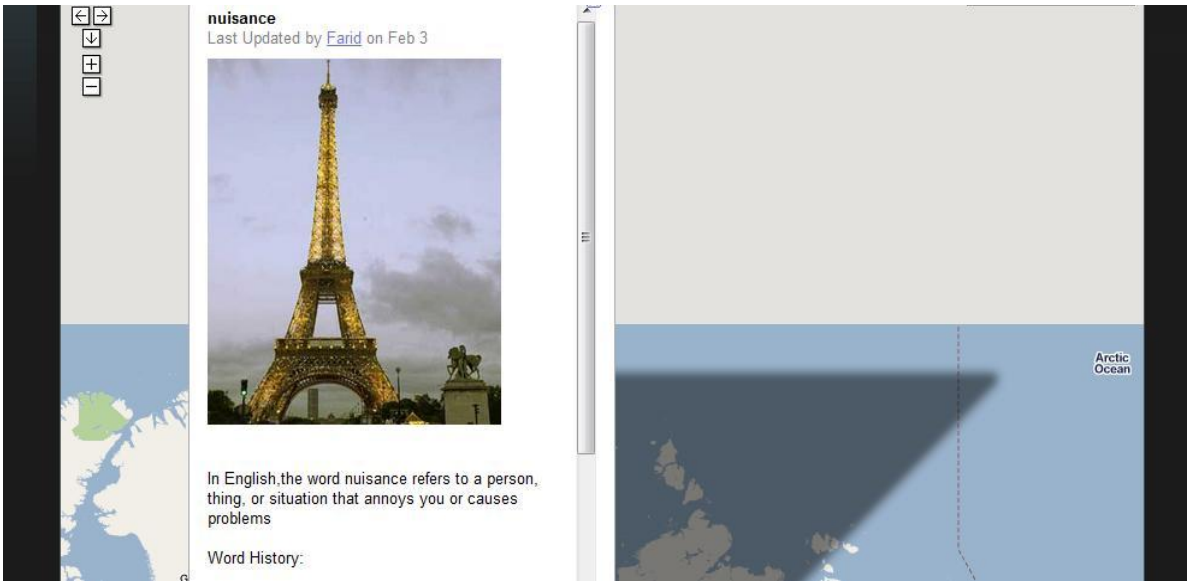


Figure F6: Sample Word Marker from Collaborative Treatment Group Participant

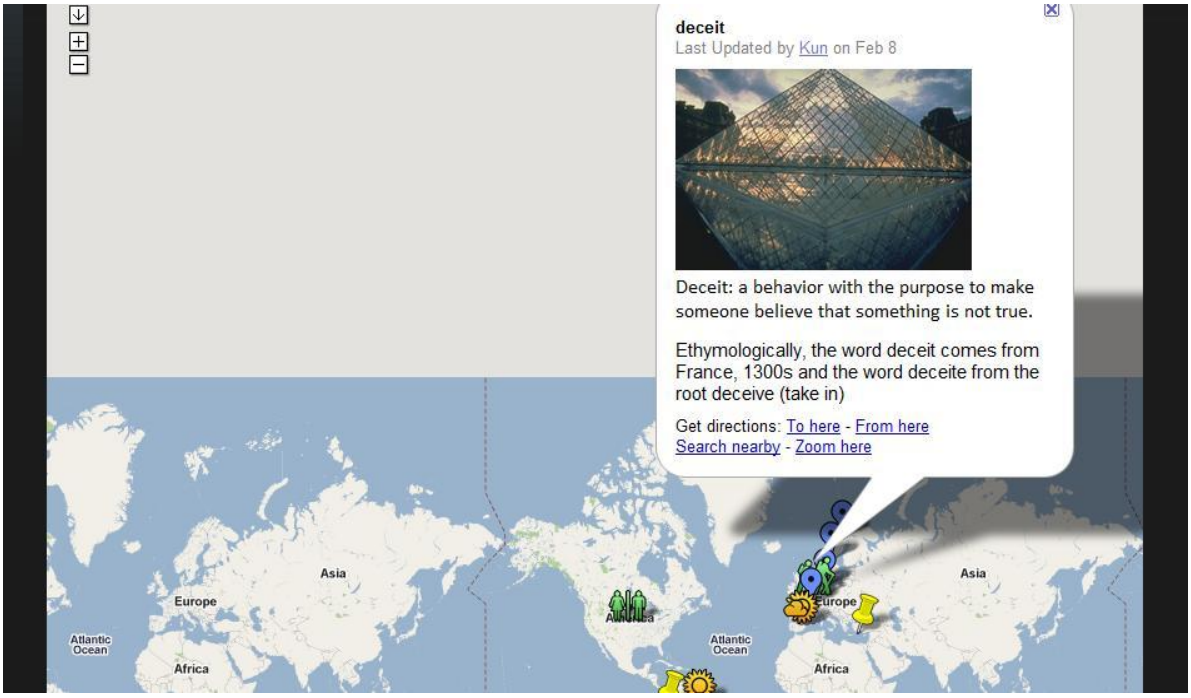
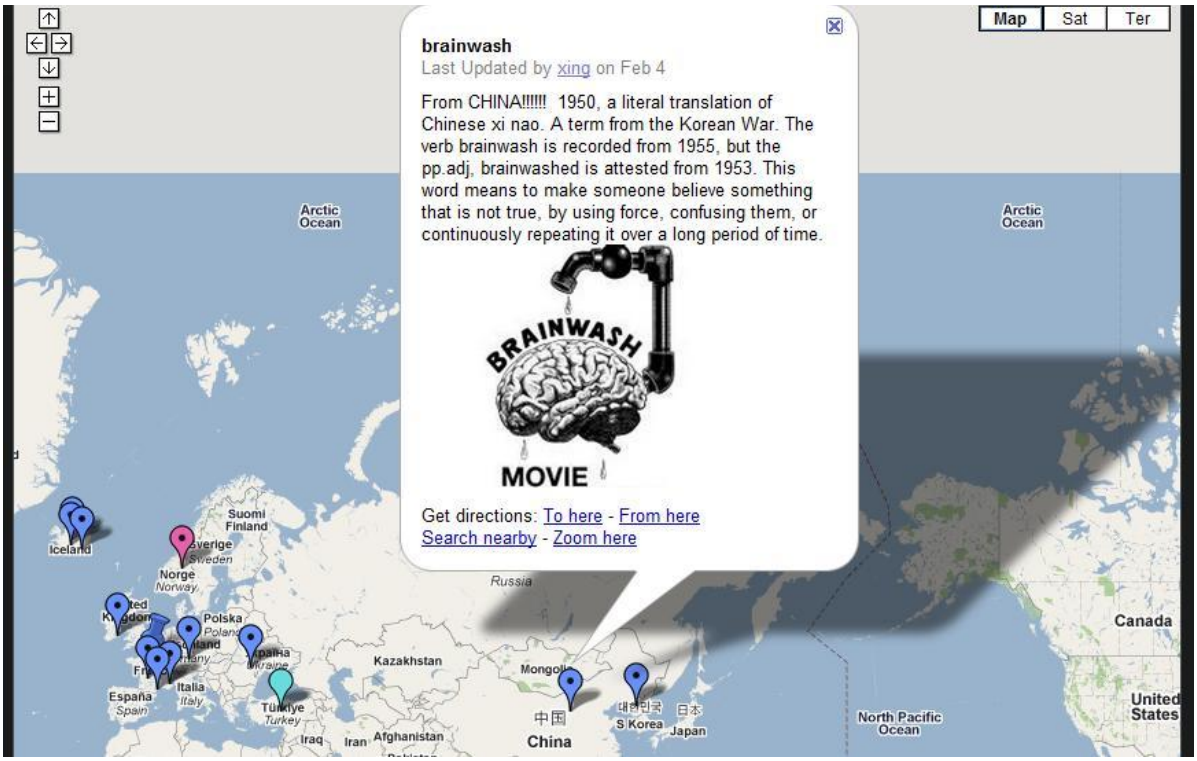


Figure F7: Sample Word Marker from Collaborative Treatment Group Participant



APPENDIX G: LANGUAGEQUEST INSTRUCTIONS FOR LEARNERS

Now that you understand what etymology is and what etymologists do, it is time for *you* to become an etymologist! Based on the results from the vocabulary test taken during the last class, it was determined that at least 75% of the class does not know the meaning of the following vocabulary words:

[LIST OF 9-12 VOCABULARY ITEMS: List varies dependent on class]

This activity lets you independently explore the meanings of these unfamiliar words and what world languages these words came from before they were adopted into English. You will also get practice using the word in a sentence and picking a media element that represents the country of origin of each word. Follow these steps to get started with your etymology research.

1) If you haven't already done so, you will need to sign up for a gmail account. You will need a gmail account to gain access to the Final Map at the end of this activity.

2) Now it's time for you to start your research for each of these words. To complete this project you will need to gather the following information:

- the meaning of the word in English
- what language the word comes from
- meaning of the word in the original language
- any relevant information about when and/or how the word was adopted into English

Gathering information about word meanings and word origins may seem overwhelming at first as there are hundreds of sites online and it is difficult to know if these sources are credible or provide accurate information. The online version of the Longman Dictionary of Contemporary English is a great source to find the meaning of a word in English. This dictionary also gives examples of the word used in a phrase or sentence and even gives an audio sample of how the word is pronounced. Do not copy the definition from the dictionary, but compose a definition in your own words.

To research the etymology of the word, use the Etymology Online Dictionary. This is a reliable site that gives you information about from what language the word originates, what the original meaning of the word was in that language, and sometimes even provides information about when and how the word was adopted into English. You should record this information in your own words.

3) After you have done your research into the etymology of each word, you will:

- compose an original sentence using the word correctly in context
- choose a media element (photo, video) that you think represents the language or culture of origin of the word

You should create an original sentence using the word correctly in context. If you have questions about the appropriateness of the word in the sentence you have written, please ask the instructor.

Now, you should find a video, with or without sound, or an image that you think represents the language, country or culture of origin of the word. I suggest looking on YouTube for a video and Flickr for a photo. Remember that the video or image you choose should be appropriate to share with the class and put on our class map. When you have chosen the image, make sure you save the URL (the web address that shows only the picture). When you have chosen the YouTube video, make sure you save the address.

4) When you have completed all the above steps, you are ready to put this information on our class map. Click here to go to the page where you can edit our class map. A tab on the left portion of the screen will read "Save to My Maps." Click this link. You will now be transferred to the login page for gmail. You will need to log into your gmail account. Once you do this, you should be transferred back to the page showing our class map. At this point you may edit the class map and put in the information you have found for each of the vocabulary words.

To edit the map, first click the "Edit" button on the left portion of the screen. You are now free to make changes to this map. You may zoom in or out on portions of the map by pressing the plus (+) or minus (-) symbols on the zoom icon, which looks like the icon appearing to the left.

When you have located the country or area of the world from which a word derives, you are ready to place a marker on the map and start entering your information. Find the marker tab, which appears in the upper left corner at the top of the map (looks like the icon appearing below) and drag this icon to the place on the map where you want it to appear. When you release the marker, a box should appear.

You can now add text to your marker. In the "Title" box, please put the word you are researching. For example, "syrup." In the "Description" box, put all of the information you gathered in your research on this word, including the meaning of the word, the language the word comes from, the meaning of the word in the original language, and any other relevant information about when or how the word was adopted into English. This information should be written in complete sentences (or one complete sentence). After adding this information, you may write your example sentence. You can use *italics* to show it is an example sentence, or you may simply write "Example sentence:" before entering the sentence you have composed.
Now you can add the picture or video that you have chosen to represent the country or language of origin of the word.

*To insert an image, click on the "Rich Text" tab in the "Description" box. Now click on the small picture icon. A box will appear that prompts you to give the web address of the picture. Once you have pasted the web address in the box and clicked "OK," your picture should appear in the text box.

*To insert a YouTube video, go to the video you want to put in the box on the YouTube site. In the gray box to the right of the video, there will be a box that says "Embed." Highlight and copy the entire address to the right of this box. Return to the map. In the "Description' box, press the "Edit html" tab. Paste the address below the last character written in the box. Click back to "Rich Text" mode and press OK. When you check your marker, your text and video should appear.

Remember that throughout this activity you may look at the Sample Outcome to get an idea of the type of information, format of information and outcome of the activity. Also, you can edit the location and the information you insert in the marker later, so don't worry if you don't have it all perfect as you're completing the activity.

When you are finished with all of the words, take a look at some of the work your fellow classmates have done. Isn't it amazing how diverse the English language is?

APPENDIX H: POST-TEST SURVEY

Post-Test Survey

Name_____ Email Address _____

(provide email address if you would like to receive feedback concerning the results of your Post-Test Survey)

PART ONE

The purpose of this survey is to determine your knowledge of and ability to use the following English language vocabulary words. Please circle the number that best represents your knowledge of each of the following vocabulary items. Where appropriate, please write a synonym and/or sentence that shows your ability to use the word appropriately in context.

[Vocabulary Word]

1. I don't remember having seen this word before.
2. I have seen this word before, but I don't know what it means.
3. I have seen this word before, and I think it means _____(synonym).
4. I know this word. It means _____ (synonym).
5. I can use this word in a sentence: (Write a sentence. *If you do #5, please also do #4).

   _____

**(Target vocabulary items were tested using the above format. For a list of the items tested according to learning group, see Appendix E.)*

PART TWO

Please carefully read the questions and circle the number that best describes your response. Also, please explain your response below each question in the space provided.

My current attitude towards learning English language vocabulary is: (1 is the most negative, 5 is the most positive). Please circle one.

1 2 3 4 5

Please explain your response: _____
_____

I am motivated to study English vocabulary: (1 is "absolutely no," 5 is "absolutely"). Please circle one.

1 2 3 4 5

Please explain your response: _____
_____

Please explain how your participation in the LanguageQuest would have been different if you had *worked with a partner / worked individually. Why?:
_____
_____
_____

Do you feel *working with a partner / working individually during the LanguageQuest would have had a more positive, more negative, or neutral effect on your attitude towards English language vocabulary learning? Please explain your answer.:
_____
_____
_____

**Note : Wording of final two questions was dependent on the learning style in which the participant completed the LanguageQuest.*

Thank you for your participation in this study!

APPENDIX I: PARTICIPANTS' RESPONSES TO LIKERT-SCALE QUESTIONS ABOUT LEARNER ATTITUDES TOWARDS ENGLISH VOCABULARY LEARNING

Collaborative Group

Participant #	Pre Resp.	Post Resp.	[Post Resp.] - [Pre Resp.]
1	3	3	0
2	4	4	0
3	3	3	0
4	3	4	1
5	3	4	1
6	5	4	-1
7	4	4	0
8	5	3	-2
9	5	5	0
10	3	3	0
11	4	4	0
12	3	2	-1
		Mean	-0.166666667
		Median	0
		Stan. Dev.	0.83484711

Independent Group

Participant #	Pre Resp.	Post Resp.	[Post Resp.] - [Pre Resp.]
13	5	5	0
14	4	4	0
15	3	3	0
16	3	3	0
17	3	2	-1
18	5	3	-2
19	4	3	-1
20	4	3	-1
21	4	4	0
22	3	3	0
23	5	3	-2
24	3	3	0
		Mean	-0.583333333
		Median	0
		Stan. Dev	0.792961461

APPENDIX J: PARTICIPANTS' RESPONSES TO LIKERT-SCALE QUESTIONS ABOUT MOTIVATION TO LEARN ENGLISH VOCABULARY

Collaborative Group

Participant #	Pre Resp.	Post Resp.	[Post Resp.] - [Pre Resp.]
1	3	2	-1
2	4	4	0
3	3	3	0
4	5	5	0
5	2	3	1
6	4	3	-1
7	4	4	0
8	5	3	-2
9	4	5	1
10	4	3	-1
11	2	3	1
12	2	3	1
		Mean	-0.083333333
		Median	0
		Stan. Dev	0.99620492

Independent Group

Participant #	Pre Resp.	Post Resp.	[Post Resp.] - [Pre Resp.]
13	3	5	2
14	4	5	1
15	3	3	0
16	4	4	0
17	3	2	-1
18	5	3	-2
19	4	3	-1
20	2	3	1
21	3	4	1
22	3	3	0
23	5	3	-2
24	3	3	0
		Mean	-0.083333333
		Median	0
		Stan. Dev	1.240112409

APPENDIX K: PARTICIPANTS' COMPLETE RESPONSES TO QUESTIONS ABOUT MOTIVATION TO LEARN ENGLISH VOCABULARY

Collaborative Group

Pre-Test Survey			**Post-Test Survey**	
Part. #	***Likert***	***Open-Ended***	***Likert***	***Open-Ended***
1	3	Learning English vocab is important but what more important is the reading. I personally think if you read more materials the more vocabulary you will know.	3	I kind of sick about it because I don't like to do a thing constantly for a long time.
2	4	Most of the questions I answered honestly. I like learning English by learning vocabulary.	4	I like learning new words.
3	3	I am not too positive also not too negative.	3	My current attitude towards learning English is neutral.
4	3	I don't remember words that I have seen already.	4	I am more motivated to find the meaning of new words.
5	3	My vocabulary is not good, so I think I could learn hard. But I am not very interested about learning.	4	I think vocabulary is English basic. I need to learn.
6	5	Because it helps in my future classes of studies.	4	N/A
7	4	I would like to know some vocabulary for improving my writing.	4	N/A
8	5	I need to understand my coworker. Also, I want to make my life in America become easier.	3	I want to learn more new vocabulary, but it spent me a lot of time.
9	5	I need English to study and survive.	5	I need a huge vocabulary to read a textbook.
10	3	I will look words up in the dictionary which appear regularly.	3	I am so busy recently, but I still want to learn English vocabulary.
11	4	Vocabulary is the basic skill to learn English.	4	Vocabulary is basic skill.
12	3	I try to remember every vocabulary that I have seen, but I cannot. However, I never remember words from some special vocabulary books.	2	N/A

Independent Group

Pre-Test Survey **Post-Test Survey**

Part.#	***Likert***	***Open-Ended***	***Likert***	***Open-Ended***
13	5	Learn more English.	5	To learn more than I don't know before.
14	4	The words is very difficult to me most of the words is rarely seen.	4	That because I have improve my words, skills. In English by time, and also the english class help me.
15	3	As we all know, English vocabulary is hard for us Chinese students, but it is a must to learn vocabulary.	3	Vocabulary is hard for me as I would memorize so many words.
16	3	N/A	3	N/A
17	3	I need to learn vocabulary to be good in academic classes.	2	I don't want to learn English anymore.
18	5	It can help me to understand what others say.	3	It can help me to understand what others said.
19	4	N/A	3	I don't like memorize vocabulary.
20	4	N/A	3	I always try to learn more words in my daily life.
21	4	The vocabulary is the basement thing to learn language. And it's also important thing.	4	Words is most important things to learn English well.
22	3	I think English is very important for me now.	3	I need to communicate with others.
23	5	It really advocates in developing a persons language significantly.	3	I think English is an interesting course to take and especially with the activities that comes with it, but it sometimes gets boring.
24	3	I know most of the word in this test, but I cannot find a synonym for it.	3	I'm not very interest in it.

APPENDIX L: PARTICIPANTS' COMPLETE RESPONSES TO QUESTIONS ON MOTIVATION TO LEARN ENGLISH VOCABULARY

Collaborative Group

Pre-Test Survey			**Post-Test Survey**	
Part. #	***Likert***	***Open-Ended***	***Likert***	***Open-Ended***
1	3	Sometimes I maybe activated study English vocabulary but not often.	2	I think I am learning in a natural way.
2	4	N/A	4	N/A
3	3	Because it is hard to learn how vocabulary, but I have to do it.	3	N/A
4	5	Because it will increase my awareness when listening.	5	Because it will enhance my awareness.
5	2	If my English is not good, it means maybe when I sitting in class, I cannot understand what teacher said.	3	I need to improve my English skills.
6	4	Because it helps in my future classes of studies.	3	N/A
7	4	N/A	4	Vocabulary is the foundation of English learning.
8	5	I have a lot of reading stuff to finish. I have to study English vocabulary.	3	Because my major needs me to learn a lot of vocabulary.
9	4	I want to read newspaper smoothly.	5	I need to study English of my major.
10	4	I have passion to learn vocabulary recently.	3	I have exams and performance recently, and I feel tired. So there is no much passion for me to learn.
11	2	Not interested in remember vocabulary.	3	Not interesting in learn vocabulary
12	2	I don't like study that.	3	N/A

Independent Group

Pre-Test Survey			**Post-Test Survey**	
Part. #	***Likert***	***Open-Ended***	***Likert***	***Open-Ended***
13	3	My friends suggest I do more vocabulary	5	I can understand more if I study vocabulary more.
14	4	It help me in my study to understand my class, research, my social life in the USA	5	Because it is very important to know the word that you have and that uses it in your class or study.
15	3	English is the most spoken language in the world.	3	Learning more vocabulary is beneficial for my English study.
16	4	N/A	4	
17	3	I want to learn because it will be easy for me to understand professor and my American friends better.	2	N/A
18	5	I must know a lot of words now.	3	It can help me to understand what others said.
19	4	N/A	3	N/A
20	2	N/A	3	Learn more words help me improve in my academic course so I'm interested in that.
21	3	N/A	4	We should learn it by ourself and positive then we can learn them fast.
22	3	I don't like to remember English words.	3	I don't have so much time to study English
23	5	Well, as I said before, it makes it easy for us in the long term, especially since all the courses here are in English.	3	I am motivated to study English when activities are involved, but not homework.
24	3	I want to improve in my vocabulary.	3	I'm not very interest in it.

APPENDIX M: PARTICIPANTS' RESPONSES TO QUESTION ON PARTICIPATION IN DIVERGENT LEARNING STYLE

Collaborative Group

Part. #	***Please explain how your participation in the LanguageQuest would have been different if you had worked alone.***
1	Working along is a little bit boring.
2	We share our research. It easier and faster than worked alone.
3	It is an interesting activity for me, I like to study vocabulary this way.
4	It makes you interact with others.
5	N/A
6	If I had worked alone, I would not be motivated to learn.
7	Teamwork distributed the workload evenly, so that I don't have to do it all.
8	It gave me a chance to learn other stuff in partner work.
9	I can do the job myself.
10	In the LanguageQuest, I can learn in different ways and it will be more efficient than working alone.
11	N/A
12	N/A

Independent Group

Part. #	***Please explain how your participation in the LanguageQuest would have been different if you had worked with a partner.***
13	I can learn more with a partner, because the partner may know the word that I don't know.
14	It improve it because it push me to learn more from other person.
15	It is more fun and comfortable with partner.
16	I don't like this activity. The time flies!
17	It will be same.
18	We can discuss some questions and he will tell me something which I don't know.
19	I don't like work with a partner. I like thinking by myself.
20	Maybe my partner will tell me some words I don't know. It's good for study.
21	Just use some simple words.
22	I don't know.
23	I think we would have finished many words than an individual would do and actually benefit more, since you will be discussing the topic with your partner.
24	It would be much easier, because two brains is better than one.

APPENDIX N: PARTICIPANTS' RESPONSES TO QUESTION COMPARING DIVERGENT LEARNING STYLE'S EFFECT ON ATTITUDES TOWARDS ENGLISH VOCABULARY LEARNING

Collaborative Group

Part. #	***Do you feel working alone during the LanguageQuest would have had a more positive, more negative, or a neutral effect on your attitude towards English language vocabulary learning?***
1	Because I think working together will give us more chance to practice the word we search and could make us learn from each other.
2	Working alone makes me memorize the words deeply, because I do all the work individually.
3	I think work alone during the LQ will have a more negative effect, cause more people will provide more ideas and we will have more interactions in it.
4	It would have been more negative to work alone. It is good to interact while learning.
5	I think working alone is more positive. I think working alone can give me very quiet experience.
6	Working in the group is more fun at the start and as interest grows, working alone would be more beneficial.
7	No. Personally, I liked learning together more than alone. Having participated and work together made me learn fast.
8	Neutral. Maybe I need more time to finish but I did everything. I can remember them more clear.
9	It doesn't matter.
10	Neutral effect. Different methods lead to different results.
11	Neutral effect. Different method have different effect.
12	I think it's neutral effect, but if can do team work, more people can push you to study it well.

Independent Group

Part. #	***Do you feel working with a partner during the LanguageQuest would have had a more positive, more negative, or a neutral effect on your attitude towards English language vocabulary learning?***
13	Working with a partner is more positive. The reason is I can learn more with a partner because the partner may know the word that I don't know.
14	More positive with a partner, it improve my language and other skills.
15	More positive with a partner.
16	N/A

Independent Group (continued)

Part. #	***Do you feel working with a partner during the LanguageQuest would have had a more positive, more negative, or a neutral effect on your attitude towards English language vocabulary learning?***
17	I think it will be neutral effect, it doesn't matter you study with a partner or not. You need to have interested to learn if you have interested you can do it without partner.
18	I feel working with a partner during the LanguageQuest would have been more positive effect on my attitude towards English language vocabulary learning. He can help me a lot.
19	I'm not sure. Maybe neutral effect, because I like thinking by myself.
20	More positive. We can discuss.
21	More positive since you really want your partner know what you want to say.
22	I would like to study by myself.
23	More positive with partner.
24	It more of a neutral effect on my attitude towards English.

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